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SUPPLEMENT
ՀԱՎԵԼՎԱԾ


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ՄԻՋԱԶԳԱՅԻՆ ԿՈՆԳՐԵՍ 2025

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# SUPPLEMENT

## ARMENIAN MEDICAL WORLD CONGRESS 2025

# ՀԱՎԵԼՎԱԾ

## ՀԱՅԿԱԿԱՆ ԲԺՇԿԱԿԱՆ ՄԻՋԱԶԳԱՅԻՆ ԿՈՆԳՐԵՍ 2025

It gives me an inmense pleasure to welcome all our colleagues and friends from around the globe to the Armenian Medical World Congress 2025 (AMWC2025). AMWC2025 is the 14th meeting of the Armenian International Medical Committee (AMIC) and the 20th when combined with the International Medical Congress of Armenia (IMCA), marking a long tradition of gatherings of the Armenian medical community to bring prosperity to our motherland.

AMWC2025 held under the motto “Medicine in Motion: Turning Scientific Insights into Action” , in addition to being a scientific meeting, it will serve as a platform for the convergence of knowledge and international collaboration, promoting strategical development and innovation in healthcare and medical education in Armenia.

Thanks to the hard work of the congress´ boards, I am pleased to announce that we have approximately 50 scientific-strategic sessions, around 100 abstracts were accepted for presentaion—including those submitted by young doctors and nurses competing for the Young Investigators Awards—and four innovative projects in Armenian healthcare selected for promotion and support.

More than ever before, we have a high participation from around the globe, with a significant number of attendees from Armenia, including representatives from public and private institutions, hospitals, non-profit organizations, and individual professionals. A proportional response from the Armenian Diaspora helps to shape, in a coordinated and synergistic way, the next steps in the development of healthcare in Armenia. Now, in these times of fragile peace, is the right moment to act.

Therefore, I am thrilled to invite you to join AMWC2025 and actively participate.

**Lilian Grigorian**
*Chair of the Armenian Medical World Congress 2025*

Dear colleagues,

It is beyond pleasure to welcome the highly esteemed medical experts at the Armenian Medical World Congress.

This Armenian Medical World Congress is more than a scientific forum; it is a platform for shaping the future of Armenian medicine through collaboration and dialogue among Armenian medical experts around the globe. It is a testament to the strength of our diaspora and the enduring commitment of Armenian professionals to contribute to global health, while never losing sight of their roots.

Such a strong partnership between professionals, institutions, and nations contributes to the creation of resilient healthcare systems not only for the Republic of Armenia but for the world—a healthcare system that can withstand the complex challenges of our time.

The research, clinical insights, and ideas presented in this year's abstract book are not only commendable for their academic value, but they also serve as valuable input for evidence-based health policy. As we continue the modernization of Armenia's healthcare system, we look to our Armenian community, which is spread around the world, for their insights—for more effective implementation of the reforms in the Republic of Armenia. Your work serves as a guideline for us in our continuous efforts in the sphere of healthcare.

Thank you for your unwavering dedication, and may this congress be the beginning of renewed inspiration, bold thinking, and new heights in the field of healthcare.

**Anahit Avanesyan**
*Minister of Health of the Republic of Armenia*

**Dear Colleagues and Friends,**

On the behalf of the Armenian Medical International Committee, I would like to welcome you to the 14th Armenian Medical World Congress in Madrid, Spain. This year's theme, "Medicine in Motion: Turning Scientific Insights into Action," embodies the true spirit of the meeting bringing together like-minded healthcare professionals from all over the globe to unite and share knowledge, expertise and ideas.

I am proud to report that we have an exceptional program that has been organized for you. The Congress organizing committee carefully studied the medical conditions that are the top causes of mortality in Armenia and Worldwide. Accordingly, a panel of experts have been invited to deliver lectures on the latest advances in medicine and science. The topics covered in the program include cardiovascular disease, stroke, oncology, obesity, diabetes, infectious diseases and others. In addition to an impressive plenary program, the committee has organized concurrent breakout sessions which include lectures of various disciplines in medicine, dentistry, pharmacy, nursing, mental health and other allied fields of health. These sessions have been organized with careful attention to ensure that the diverse interests and educational needs of our attendees are met.

We will also discuss health care policy and medical education in Armenia. These series of lectures are designed to examine potential avenues of enhanced collaboration and cooperation between Armenian and Diasporan efforts to improve health and medical education in both Armenia and the Diaspora.

Madrid is a delightful city, and the social committee has organized a series of spectacular events with the goal of setting an enjoyable atmosphere for networking, meeting old colleagues, making new friends and having a great time. I look forward to personally meeting and welcoming you to Madrid, Spain, where together we will write the next chapter for healthcare in our nation.

Sincerely,

**Vicken Sepilian**
*President of the Armenian Medical International Committee*

It is a true honor to welcome you to the World Armenian Medical Congress 2025. As a member of the congress leadership, I am deeply proud to see colleagues from across the globe come together to share knowledge, strengthen professional ties, and celebrate the spirit of Armenian medicine worldwide.

This abstract book represents the remarkable work of our community — from groundbreaking research to meaningful clinical experience. It reflects not only scientific excellence but also our shared commitment to advancing health and well-being for all.

May this congress inspire new ideas, lasting collaborations, and a renewed sense of purpose in the work we do.

With gratitude and respect,

**Ara Babloyan**
*Honorary President of the International Medical Congress of Armenia*

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# YOUNG INVESTIGATOR AWARD (YIA) CONTEST ABSTRACTS

# ORAL PRESENTATIONS

## Surgical Innovations & Interventional Advances

### Bichat's Fat Bodies in Oral Reconstruction: A Comparative Analysis with Conventional FlapTechniques

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***Keywords:*** *Bichat's fat bodies, oral cavity reconstruction, cancer, flap*

**Introduction:** The surgical treatment of patients with oral tumors inevitably leads to postoperative defects causing functional damage. Currently, various local-rotational and free vascularized flaps are employed, all of which are associated with additional surgical trauma and defects in donor areas. Utilizing Bichat's fat bodies as a flap for reconstructing oral defects allows closing mucous membrane and soft tissue defects in the hard and soft palate, alveolar processes, cervical region, and floor of the oral cavity by primary intention. This approach can avoid additional surgeries and reduce the risk of specific complications.

**Purpose:** This study aims to analyze postoperative results of oral cavity defect reconstruction with the use of Bichat's fat bodies and to compare these results with those from other flap techniques.

**Materials and methods:** The study included 19 patients with malignant oral cavity tumors at various stages (T1–3, N0–3, M0), who underwent reconstructive surgery using different soft tissue flaps in 2022-2023.

**Results:** Of the patients, eight received the FAMM flap, 11 were treated with Bichat's fat bodies, and two had a combination of both. Unlike other flaps, no extensive preoperative preparation is required for Bichat's fat bodies; once the diagnosis is confirmed, the reconstruction can proceed without delays. Only a single incision at the upper transitional fold is needed, making the procedure technically straightforward and quick. Healing occurs within 7-10 days, with the fatty flap subsequently covered by mucous membrane. Notably, compared to the FAMM flap, there is no defect formation on the mucous neck, and the area and volume of fatty tissue available are typically greater.

**Conclusions:** The use of Bichat's fat bodies is a well-established yet optimal method for oral cavity reconstruction, demonstrating significant benefits in clinical practice.

### Endovascular Treatment of Tandem Occlusions in Anterior Circulation Stroke

*Faybushevich A., Sysoev V., Galustyan H.*

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Moscow City Clinical Hospital named after S. S. Yudin

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***Keywords:*** *internal carotid artery, ischemic stroke, tandem lesion, stenting, neurological improvement*

**Background:** Approximately 15-20% of patients, undergoing endovascular thrombectomy for anterior circulation acute ischemic stroke, have a tandem lesion, defined as a severe stenosis or occlusion of the cervical internal carotid artery ipsilateral to its intracranial occlusion. Although mechanical thrombectomy from intracranial large vessel occlusion represents the standard treatment approach for anterior circulation, it remains unclear whether the cervical ICA lesion requires acute stenting or not

**Objective:** The aim of this study was to investigate differences in clinical outcomes associated with stenting of cervical ICA lesions in a cohort of patients, undergoing thrombectomy for acute stroke.

**Methods:** This single-center study enrolled patients from September 2020 to May 2024. Included were the patients with acute ischemic stroke due to anterior circulation tandem occlusion who were treated with endovascular therapy. They were divided based on the cervical ICA lesion treatment into stent and no-stent groups. Outcomes were compared between the two treatment groups using STATTECH statistical software.

**Results:** Totally 94 patients were included, 48 of whom were treated with acute cervical ICA stenting. Early patency of the cervical ICA (patency within the first 24h after endovascular treatment) were higher in the stenting group (89.6% versus 67.4%; P=0.009). Post-ASPECTS24 ≥ 7 were higher in the stenting group (60.4% versus 39,1%; P=0.039), Early neurologic improvement was higher in the stenting group (64.6% versus 34.8%; P=0.004). Substantial clinical improvement at day 7 after endovascular treatment were higher in the stenting group (60.4% versus 37.0%; p = 0.023). Favorable functional outcomes (modified Rankin Scale, 0–2 at 90 days) were higher in the stenting group (64.6% versus 41.3%; P=0.024) with no statistically significant difference in mortality or symptomatic intracerebral hemorrhage between 2 groups.

**Conclusions:** Acute stenting of the cervical carotid lesion in conjunction to mechanical thrombectomy from intracranial large vessel occlusion appears to be the best treatment strategy for acute ischemic strokes with tandem lesions.

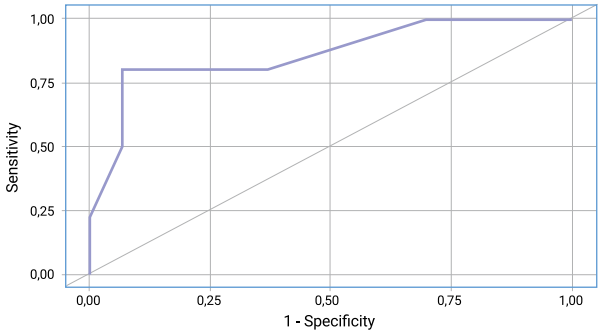
**Study Results Depending On The Randomization Group**

| Indices | Groups | | p |
|---|---|---|---|
| | Stenting group (n = 48) | Non-Stenting group (n = 46) | |
| Frequency of early patency of the cervical ICA | 43 (89,6%) | 31 (67,4%) | 0,009* |
| Functional independence at 90 days (mRs 0-2) | 31 (64,6%) | 19 (41,3%) | 0,024* |
| All cause mortality within 90 days | 5 (10,4%) | 9 (19,6%) | 0,255 |
| Frequency of symptomatic intracerebral hemorrhage (sICH) | 3 (6,2%) | 2 (4,3%) | 0,863 |

**Study Results Depending On Early Patency Of The Cervical ICA**

| Indices | Frequency of early patency of the cervical ICA | | p |
|---|---|---|---|
| | ICA obstruction (n = 20) | ICA patency (n = 74) | |
| Functional independence at 90 days (mRs 0-2) | 6 (30,0%) | 44 (59,5%) | 0,019* |
| All cause mortality within 90 days. | 6 (30,0%) | 8 (10,8%) | 0,032* |
| Frequency of symptomatic intracerebral hemorrhage (sICH) | 1 (5,0%) | 4 (5,4%) | 0,987 |

ROC curve characterizing the dependence of the probability of favorable functional outcome at 90 days (mRs 0-2) on ASPECTS after 24 hours (Post-ASPECTS$_{24}$)




**Impact of Post-ASPECTS$_{24}$ on functional independence at 90 days (mRs 0-2)**

| Indices | Post-ASPECTS$_{24}$ | | p |
|---|---|---|---|
| | Post-ASPECTS24 <7 (n = 47) | Post-ASPECTS24 ≥7 (n = 47) | |
| Functional independence at 90 days (n = 50) | 9 (19,1%) | 41 (87,2%) | < 0,001* |

**Impact of Post-ASPECTS$_{24}$ according to randomization group**

| Indices | Categories | Groups | | p |
|---|---|---|---|---|
| | | Non-Stenting group (n = 46) | Stenting group (n = 48) | |
| Post-ASPECTS$_{24}$ | Post-ASPECTS24 <7 | 28 (60,9%) | 19 (39,6%) | 0,039* |
| | Post-ASPECTS24 ≥7 | 18 (39,1%) | 29 (60,4%) | |

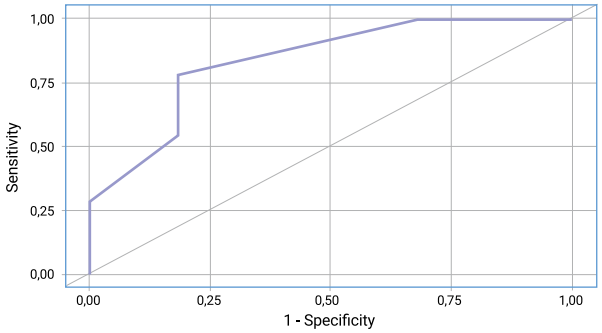
**Impact of Post-ASPECTS$_{24}$ analysis in relation to early patency of the extracranial ICA**

| Indices | Categories | Frequency of early patency of the cervical ICA | | p |
|---|---|---|---|---|
| | | ICAobstruction (n = 20) | ICApatency (n = 74) | |
| Post-ASPECTS$_{24}$ | Post-ASPECTS24 <7 | 15 (75,0%) | 32 (43,2%) | 0,012* |
| | Post-ASPECTS24 ≥7 | 5 (25,0%) | 42 (56,8%) | |

**Post-ASPECTS$_{24}$ cut-off points**

| Threshold | Sensitivity (Se), % | Specificity (Sp), % | PPV | NPV |
|---|---|---|---|---|
| 8,0 | 50,0 | 93,2 | 89,3 | 62,1 |
| **7,0** | **80,0** | **93,2** | **93,0** | **80,4** |
| 6,0 | 80,0 | 63,6 | 71,4 | 73,7 |

ROC curve characterizing the dependence of the probability of favorable functional outcome at 90 days (mRs0-2) on Δ NIHSS 24 h after endovascular treatment (ΔNIHSS$_1$).




- Δ NIHSS$_1$ neurological regression within the first 24 hours after endovascular treatment
- Δ NIHSS$_7$ neurological regression within the first week after endovascular treatment

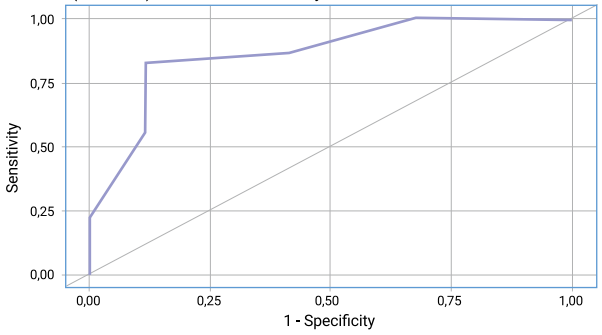
**Δ NIHSS$_1$ cut-off poins**

| Threshold | Sensitivity (Se), % | Specificity (Sp), % | PPV | NPV |
|---|---|---|---|---|
| 7,0 | 54,0 | 81,8 | 77,1 | 61,0 |
| **6,0** | **78,0** | **81,8** | **83,0** | **76,6** |
| 3,0 | 88,0 | 56,8 | 69,8 | 80,6 |

**Neurological regression (Δ NIHSS$_1$ and Δ NIHSS$_7$) in patients who achieved and did not achieve functional independence at 90 days**

| Indices | Categories | Functional independence at 90 days mRs 0-2) | | | p |
|---|---|---|---|---|---|
| | | Me | $Q_1 - Q_3$ | n | |
| Δ NIHSS$_1$ | No functional independence | 2,0 | 1,0 – 3,0 | 44 | < 0,001* |
| | Functional independence | 7,0 | 6,0 – 8,0 | 50 | |
| Δ NIHSS$_7$ | No functional independence | 4,0 | 3,0 – 5,0 | 44 | < 0,001* |
| | Functional independence | 10,0 | 9,0 – 10,0 | 50 | |

ROC curve characterizing the relationship between the probability of favorable functional outcome at 90 days (mRs0 - 2) and Δ NIHSS at 7 days after endovascular treatment.




**Δ NIHSS$_7$ cut-off points**

| Threshold | Sensitivity (Se), % | Specificity (Sp), % | PPV | NPV |
|---|---|---|---|---|
| 10,0 | 56,0 | 88,6 | 84,8 | 63,9 |
| **9,0** | **82,0** | **88,6** | **89,1** | **81,2** |
| 5,0 | 86,0 | 59,1 | 70,5 | 78,8 |

**Neurological improvement depending on the randomization group**

| Indices | Groups | | p |
|---|---|---|---|
| | Non-Stenting group (n = 46) | Stenting group (n = 48) | |
| Early neurological improvement (Δ NIHSS$_1$ ≥ 6) | 16 (34,8%) | 31 (64,6%) | 0,004* |
| Significant neurological improvement at day 7 (Δ NIHSS$_7$ ≥ 9) | 17 (37,0%) | 29 (60,4%) | 0,023* |

**Impact of early patency of the cervical ICA on neurological improvement**

| Indices | Frequency of early patency of the cervical ICA | | p |
|---|---|---|---|
| | ICA obstruction (n = 20) | ICA patency (n = 74) | |
| Early neurological improvement (Δ NIHSS$_1$ ≥ 6) | 4 (20,0%) | 43 (58,1%) | 0,002* |
| Significant neurological improvement at day 7 (Δ NIHSS$_7$ ≥ 9) | 5 (25,0%) | 41 (55,4%) | 0,0163* |

## Modern Methods of Surgical Treatment of Hernias of the Anterior Abdominal Wall: Our Experience

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***Keywords:*** *Hernia, laparoscopy, surgical procedure*

**Background:** Inguinal hernia repair is a common surgical procedure, with laparoscopic techniques increasingly favored for their benefits in recovery and diagnostic precision. This retrospective study analyzes our experience with laparoscopic and open hernia repair.

**Methods:** Data of 220 patients treated for inguinal hernia have been reviewed. Laparoscopic repair was performed in 200 patients using TAPP and eTEP techniques, while 20 patients underwent open repair via the Lichtenstein method. Outcomes measured included hospital stay, operation time, detection of bilateral hernias, and complication rates.

**Results:** The mean hospital stay for laparoscopic patients was 1 day. Mean operation time was 45 minutes for laparoscopic repair and 55 minutes for open repair. Bilateral hernias were repaired in 46.7% of laparoscopic cases, with 18.7% right-sided, 14% left-sided, and 4.7% involving umbilical hernias. Among bilateral cases, 42% (40 patients) were initially diagnosed as unilateral but identified as bilateral intraoperatively. Hematomas occurred in 20% of the first 20 cases, but decreased to 3.6% after implementing selective perimesh drainage.

**Conclusions:** Laparoscopic hernia repair is a safe and effective method with a low complication rate. It also provides a sensitive approach for diagnosing bilateral hernias, often uncovering previously undetected cases.

## Our Experience in Managing Patients with Osteoma of the Frontal Sinus

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***Keywords:*** *osteoma, endoscopic endo-nasal surgery*

**Background:** Frontal sinus osteoma poses challenges in diagnosis and surgical management due to its location and potential complications. Precise preoperative planning and selection of the optimal surgical approach are crucial for successful outcomes.

**Objective:** This retrospective study aims to present the outcomes of six patients with frontal sinus osteoma, who underwent surgical treatment at Izmirlian Medical Center, evaluating the efficacy of different surgical techniques and highlighting the role of preoperative imaging in guiding treatment decisions.

**Methods:** Six patients with frontal sinus osteoma, including three males and three females, have been included in the study. Preoperative diagnostics comprised computed tomography (CT) scans to assess tumor characteristics and determine the most suitable surgical approach. Patients observed were aged 50 and above. Surgical interventions varied among patients, with two undergoing endonasal excision under endoscopic control and four undergoing a combined approach involving both: open and endoscopic frontotomy. Histological examination provided insights into the nature of the osteomas.

**Results:** Histological analysis revealed fibro-osseous osteoma in two cases and osseous osteoma in four cases. The average age of patients shows that osteomas grow slowly and the patient consults a doctor when symptoms appear, in particular headache. The combined approach of open frontotomy and endoscopic frontotomy was chosen for the majority of cases. Postoperative outcomes, including surgical complications and symptom resolution, were assessed.

**Conclusions:** This case series underscores the importance of preoperative CT imaging in selecting the optimal surgical approach for frontal sinus osteoma. The results demonstrate the feasibility and efficacy of both endonasal and combined approaches in achieving successful tumor excision. These findings contribute to the optimization of treatment strategies and outcomes for patients with frontal sinus osteoma, emphasizing the need for individualized management based on tumor characteristics and patient-specific factors.

## Surgical Treatment of Laryngomalacia

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***Keywords:*** *Laryngomalacia, stridor, supraglottoplasty, tracheostomy, upper airway obstruction*

**Background:** Laryngomalacia is the most common congenital pathology of the larynx and the primary cause of stridor in neonates and infants. While laryngomalacia often presents only with stridor, in severe cases, it can delay physical and psycho-emotional development in children, necessitating surgical intervention. Objective of our study is to assess the efficiency of supraglottoplasty for decompensated form of laryngomalacia.

**Methods:** The study encompassed 196 children, comprising 116(59.1%) boys and 80(40.8%) girls. The patients performed flexible fiberoptic laryngoscopy, blood tests and were categorized into two groups: the first group (n=167) included children with a compensated form of laryngomalacia, and the second group (n=29) consisted of children with a decompensated form. There were 150(76%) cases of the second type of laryngomalacia, 45(22.5%) cases of the first type and 3(1.5%) cases of third type. Laryngomalacia was an isolated pathology for 89(45,4%) patients. In 107(54,6%) children, there was concomitant pathology, which was presented by pathology of the nervous system (26,5%), cardiovascular system (16,0%), digestive system (13,0%), etc.

**Results:** Surgical treatment was undertaken in 33 (16%) children with decompensated laryngomalacia. The first day after the surgery stridor disappeared in 20 (60%) patients and was diminishing in 7 (21%) patients. The main complication that we observed after supraglottoplasty was an increase in aspiration syndrome, which was noted in 5 (15%) patients and was relieved in all of them within 2 weeks. 3 children, who exposed a tracheostomy only because of laryngomalacia, were decannulated after supraglottoplasty. Within 14 days post-surgery, mentioned symptoms were alleviated. Follow-up examinations in 1, 6, and 12 months revealed no complications.

**Conclusions:** Indications for supraglottoplasty include symptoms of upper respiratory tract obstruction, aspiration syndrome, poor weight gain, respiratory decompensation due to infections, obstructive sleep apnea syndrome, and endoscopic evidence of inspiratory collapse of vestibular larynx. Supraglottoplasty has been demonstrated as an effective treatment for decompensated laryngomalacia.

## Advances in Oncology & Diagnostic Strategies

### Diagnostic Performance and Survival Outcome Following Sentinel Lymph Node Biopsy in Breast Cancer Patients from the Cancer Center in Armenia

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***Keywords:*** *breast cancer, sentinel lymph node, biopsy, organ-preserving treatment, ultrasonography*

**Background:** Sentinel lymph node biopsy (SLNB) has replaced axillary lymph node dissection (ALND) for axillary staging in early node-negative breast cancer (BC) patients in developed countries. However, in resource-constrained developing countries, adoption of SLNB is slow due to logistic issues and lack of outcome data from non-screened BC cohort. Therefore, our aim is reporting diagnostic performance, surgical morbidity and survival outcome of SLNB in BC patients from the cancer center in Armenia.

**Materials and methods:** Data from 642 breast cancer patients, who underwent SNB and lymph node dissection between 2020 and 2023, were retrospectively analyzed. Patient demographics, disease stage, histological patterns, and subtype distribution were collected and analyzed. Statistical methods were employed to assess the association between SNB findings and treatment outcomes.

**Results:** Statistical calculations were performed in the program Statistica 10. The compiled sample was based on the analysis 642 cases of surgical treatment of breast cancer databases. When divided into stages disease we received 220 (34%) (group I) patients with the first stage, 305 (43%) (group II) with the second stage IV stages accounted for 117 (23%) analyzed cases. Analysis of histological forms in the first group showed that 20.4% were highly differentiated tumors, 69.5 and 10.1% are moderately differentiated and poorly differentiated, respectively. Luminal subtypes accounted for 92.4% of formations: 43.4% were luminal A type, 49.6% luminal B type. Non-luminal types accounted for 7.6%, of which triple negative was 3.85%. Well-differentiated tumors in the second group were 9.1%, moderately differentiated - 64.9%, poorly differentiated - 26%. Luminal subtypes accounted for 88% of formations: 22.7% were luminal A type, 65.3% were luminal B type. Non-luminal types accounted for 12%, of which triple negative was 5.55%.

**Conclusions:** Sentinel lymph node biopsy is an effective and minimally invasive surgical intervention for staging breast cancer. The analysis highlights its accuracy in diagnosing regional and distant metastases, as well as its impact on surgical volume and treatment outcomes in Armenia. SNB helps reduce recurrence and improve overall survival in patients with stage T1-2N0M0 breast cancer.

## Radioguided Sentinel Lymph Node Biopsy in Breast Cancer Surgery

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***Keywords:*** *sentinel lymph node; breast cancer; radiocolloid; interstitial administration; lymphoscintigraphy; intraoperative g-probe guidance*

**Background:** Sentinel lymph node biopsy (SLNB) is a critical technique in the management of breast cancer. It is based on the principle that the sentinel lymph node, the first node to receive lymphatic drainage from a tumor, is most likely to harbor metastatic cancer. In clinically node-negative (N0) patients, SLNB can effectively stage the axilla with minimal invasiveness, offering an alternative to complete axillary node dissection (ALND), which is associated with significant morbidity.

**Objective:** This study aims to evaluate the efficacy and outcomes of SLNB in breast cancer surgery, focusing on its role in axillary staging and its potential to reduce the need for axillary dissection.

**Methods:** We reviewed current literature on SLNB, focusing on its success rates, techniques, and outcomes. This includes an analysis of lymphatic mapping, the use of radiotracers (such as 99mTc-labeled colloids), and the combination of radioguided techniques with vital blue dye for sentinel node identification. We also evaluated the prognostic implications of a negative sentinel node biopsy in the context of axillary metastasis.

**Results:** SLNB offers a high success rate (94%-97%) in localizing sentinel nodes, with nearly 99% accuracy when combined with vital blue dye. A negative sentinel node biopsy correlates with a low likelihood of additional axillary metastasis, particularly in small tumors (T1a-b). Additionally, SLNB reduces complications such as lymphedema and nerve injury compared to ALND, with fewer histological sampling errors due to the focused analysis of a single node.

**Conclusions:** SLNB is a highly effective, minimally invasive procedure that can replace axillary node dissection in clinically N0 patients, leading to fewer complications without compromising cancer staging. Further studies are needed to assess the long-term clinical outcomes of avoiding axillary dissection in patients with negative sentinel nodes.

# Pediatrics, Allergy & Immunology

## Clinical and Laboratory Characteristics of Acute Lower Respiratory Tract Infections in Children with Radiological Interstitial Changes in the Lungs

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***Keywords:*** *lower respiratory infections, radiologic changes*

**Background:** The correct diagnosis of lower respiratory tract infections (LRTI) and the decision to prescribe antibiotics remain important issues for pediatricians. This process may require the comparison of clinical, laboratory, and radiological data. Radiologically, LRTI in some cases presents as focal or diffuse “interstitial” pneumonia. These changes may be caused by both viruses and bacteria, and the interpretation of such data can sometimes be controversial.

**Objective:** To compare clinical features, key laboratory findings, and outcomes of LRTI cases with radiologically confirmed “interstitial” pneumonia.

**Methods:** A retrospective study was conducted using data from patients with LTRI featuring radiological interstitial components who were admitted to the Department of Pediatrics No1 at Arabkir Medical Center from January to May 2024. Data were extracted from electronic medical charts and analyzed using descriptive statistical methods.

**Results:** Among 20 patients, 8 (40%) had radiological changes interpreted as left-sided pneumonia with an interstitial component, right-sided in 9 (45%), and 3 (15%) had bilateral pneumonia. Seventeen patients (85%) had high fever, and 11 (55%) had SpO2 <92%. Wheezing was present in fourteen patients (70%), 2 of whom developed severe distress and have been admitted to ICU. Otitis media was present in 30% of cases. Nasopharyngeal swabs were positive in four cases (2 RSV, 1 Influenza A, 1 M. pneumoniae). Sixteen patients (80%) exhibited significantly elevated CRP levels, (median 91.9 mg/L). Based on collation of all data, 19 patients (95%) received antibiotics, with positive treatment outcomes for all.

**Conclusions:** Data of this short observation once more showed that regardless expectations, most cases of interstitial changes required antibacterial component. The presence of wheeze suggested a possible viral etiology, however significantly high level of CRP, high fever showed correlation with significant systemic effects, possible combination with bacterial infection. There is a need to do larger study, increase number of observations for thoughtful analysis of revealed peculiarities.

## Evaluating Anaphylaxis and Mastocyte-Related Disorders: Retrospective Single Centre Analysis of Tryptase Measurements

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***Keywords:*** *Tryptase, mast cell-related disorders, mastocytosis, anaphylaxis, mast cell activation syndrome, baseline tryptase levels, acute tryptase levels, borderline tryptase levels, urticaria, angioedema, eosinophilic esophagitis, provocation tests, allergen sensitivity, epinephrine auto-injectors, diagnostic accuracy, management strategies*

**Background:** Tryptase measurements serve as a critical tool for identifying mast cell-related disorders such as mastocytosis, anaphylaxis, and mast cell activation syndromes. Understanding the distribution and clinical implications of both baseline and acute elevations of tryptase is important for effective management.

**Objective:** To analyze tryptase measurements from a single center over one year (January, 2023, to January, 2024), evaluating the distribution of borderline and elevated levels in acute and baseline states, alongside associated diagnoses and aetiologies.

**Methods:** A retrospective review of 645 patients was conducted. Tryptase levels were categorized as normal, borderline, or elevated, with analyses stratified by acute versus baseline levels and linked clinical conditions. Borderline levels were reviewed for symptoms suggestive of mastocyte-related disorders, even when an underlying condition was uncertain. Provocation tests were subsequently used to confirm allergen-related diagnoses.

**Results:** Among 645 patients, 601 (93%) exhibited normal tryptase levels, 16 (2.5%) had borderline levels, and 28 (4.5%) showed elevated levels. Diagnoses in borderline cases included mastocytosis (1), mast cell activation syndrome (3), acute urticaria/angioedema (4), and eosinophilic esophagitis (1). Elevated tryptase cases were predominantly linked to acute events, including anaphylaxis (5), mastocytosis (2), and urticaria/angioedema (12). Provocation tests confirmed allergen sensitivity in some cases. Notably, elevated tryptase helped retrospectively reassess initial diagnoses of urticaria/angioedema, underscoring the clinical implication of prescribing epinephrine auto-injectors (EpiPens).

**Conclusions:** Elevated tryptase levels largely indicate acute mast cell activation and assist in refining diagnoses, particularly for conditions such as urticaria/angioedema. Borderline levels, however, are frequently associated with symptoms of uncertain origin, requiring more comprehensive follow-up. This study highlights the importance of distinguishing between acute and baseline elevations to improve diagnostic accuracy and guide management strategies, including the use of epinephrine auto-injectors where appropriate.

## Recurrent Wheezing in Early Childhood: The Role of Risk Factors and the Predictive Value of HLA-G

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***Keywords:*** *prediction of recurrent wheezing, risk factors, early childhood*

**Introduction:** Recurrent wheezing in young children, particularly those up to 5 years old, is a common and concerning respiratory condition that may indicate a higher risk for future respiratory complications. Identifying key risk factors for recurrent wheezing is essential for early diagnosis and timely intervention. Recent studies have also suggested the potential role of biomarkers, such as soluble Human Leucocyte Antigen-G (sHLA-G), in predicting recurrent wheezing and its progression to asthma.

**Objective:** This study aims to identify key risk factors for recurrent wheezing in early childhood, focusing on clinical history, environmental factors, and the predictive value of sHLA-G.

**Materials and methods:** A case-control study was conducted comparing 90 children with and without recurrent wheezing. Risk factors such as C-section delivery, the presence of allergic anamnesis, sensitization to aeroallergens, and sHLA-G levels in blood plasma were assessed.

**Results:** In the recurrent wheezing group, sHLA-G levels were significantly elevated in 85% of children compared to the control group. Among the risk factors, C-section birth and aeroallergen sensitization were found in 55.6% of children, while the presence of allergic anamnesis was also significant with a p-value < 0.05.

**Conclusions:** Identifying risk factors such as C-section birth, presence of allergic anamnesis, and aeroallergen sensitization is crucial for recognizing children in early childhood who are at higher risk for recurrent wheezing. Elevated sHLA-G levels in the recurrent wheezing group suggest that HLA-G may serve as a predictive marker for recurrent wheezing and future asthma development.

## Sensitization and Clinical Relevance of Six Common Food Allergens in Patients Presenting Food Allergy Complaints: A Single Center Retrospective Analysis

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***Keywords:*** *food allergens, IgE mediated allergy, sensitization*

**Background:** Food allergy is an IgE-mediated condition that requires confirmation as sensitizational one does not always equate to clinical relevance. According to EAACI guidelines, integrating sensitization tests, clinical history, and provocation tests is critical for accurate diagnosis. Despite increasing global prevalence, no data exist on food allergy prevalence or clinical relevance in Armenia. This study addresses this gap by investigating sensitization rates and clinical relevance for six common food allergens.

**Objective:** To analyze sensitization rates, age-specific trends, and clinical relevance for cow's milk, egg, peanut, soy, fish, and wheat in patients presenting food allergy complaints.

**Methods:** A retrospective analysis was conducted on 480 patients who underwent specific IgE-testing over one year. Data were stratified by allergen and age group to determine testing prevalence, sensitization rates, and clinical relevance through provocation tests.

**Results:** Testing rates varied by allergen: cow's milk (202), egg (78), wheat (77), fish (49), peanut (49), and soy (25). Sensitization rates were highest for wheat (35%) and peanut (32%), followed by soy (32%), cow's milk (21%), egg (12%), and fish (6%). Age-specific analysis revealed higher sensitization rates for cow's milk (19.71%) and egg (17.65%) in children aged 0–4 years, while wheat (40%) and peanut (45.83%) predominated in adults (18+ years). Among five individuals who underwent provocation tests, one (wheat) had a confirmed allergy.

**Conclusions:** Sensitization rates and clinical relevance vary by allergen and age group. Younger children are more commonly sensitized to cow's milk and egg, while adults show higher rates for wheat and peanut. These findings emphasize the importance of age-specific diagnostics and adherence to EAACI guidelines for improved food allergy management. Further research is needed to better define food allergy prevalence in Armenia.

# Endocrinology, Metabolic Disorders & Public Health

## Blood Banks as Strategic Hubs for Hepatitis B Virus Screening: A Study Revealing a Thousandfold Increase Among Healthy Blood Donors

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***Keywords:*** *hepatitis B, incidence rate, blood bank, blood donors, vaccination*

**Background:** Despite the long existence of effective vaccines against Hepatitis B virus (HBV), HBV-related liver disease continues to be a leading cause of death and a significant public health concern on a global scale.

**Objective:** The focus of the study to evaluate the incidence rate of HBV infections among blood donors in Armenia and to associate the findings with the effectiveness of the national HBV vaccination program.

**Methods:** A retrospective analysis, focusing on transfusion transmitted infections, was performed on 3270 volunteer donor blood units from September to November 2020 (the 44-day war with Azerbaijan). Descriptive analysis was used to compute proportions, while Pearson's chi-square, Student's t-test and Mann-Whitney U test were used for associations and differences in data.

**Results:** HBV infection markers were detected in 192 blood units (5.87 %), including HBsAg positive units (N=20, 0.61%) (Table 1). A significant difference between males (N= 107, 55.8%) and females (N = 85, 44.2%) was revealed in HBV-infected blood units (p= 0.017). Infected donors (mean age - 43) were older than non-infected ones (mean age-34) (p = 0.01) (Fig. 1). No new cases of HBV infection have been observed among donors (N=223) born after the implementation of Armenia's national HBV vaccination program (1999).

**Conclusions:** 192 HBV-infected blood units (5.87%) indicates a high seroprevalence rate for presumably healthy donor pool. Moreover, the huge gap between the government-reported incidence rate (0.00024%)

and our findings (0.61%) highlights requirement of additional measures to accurately assess and manage the HBV infection in RA (Fig. 2). Nevertheless, our age-related finding supports the effectiveness of Armenia's national HBV vaccination program. Our findings predict that the actual incidence rate within the population would be notably higher, therefore proactive actions against HBV infection need to be implemented.

**Table 1.** Serological markers of prior or current infections identified in the donor blood units.

| Serological markers | Number of infected blood units |
|---|---|
| **Monoinfection** | |
| Anti-HBc | 164 (5.01%) |
| HBsAg | 2 (0.06%) |
| Anti-HCV | 11 (0.33%) |
| Anti-HBc<br>HBsAg | 17 (0.52%) |
| HIV | 1 (0.03%) |
| **Coinfection** | |
| Anti-HBc<br>Anti-HCV | 8 (0.24%) |
| Anti-HBc<br>HBsAg<br>HIV | 1 (0.03%) |

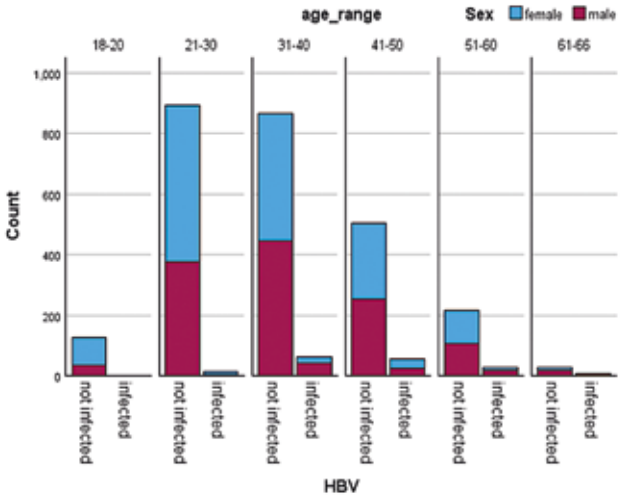


**Figure 1.** Age and sex comparison in infected and non-infected donors

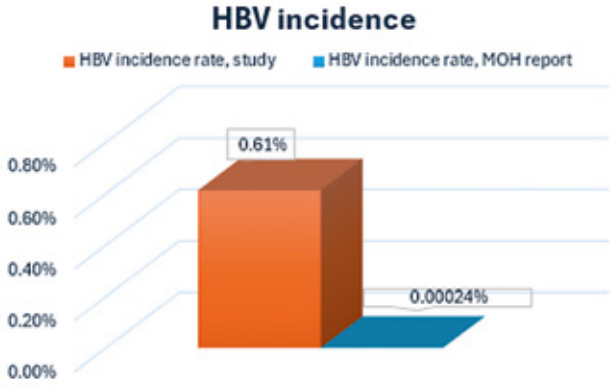


**Figure 2.** Comparison of HBV infection incidence rates: Study findings and Official government report, respectively

## Detection of Myocardial Crypts in Patients with Suspected Hypertrophic Cardiomyopathy Phenotype Using 3T Cardiac MRI

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***Keywords:*** *Hypertrophic cardiomyopathy (HCM),Myocardial Crypts,3T Cardiac MRI,Left ventricular hypertrophy (LVH),Hypertrophic phenotype, Early markers of HCM*

**Background:** Myocardial crypts have been proposed as a potential early marker of hypertrophic cardiomyopathy (HCM), yet their prevalence in patients with a suspected hypertrophic phenotype remains unclear.

**Objective:** To evaluate the frequency of myocardial crypts in patients with suspected hypertrophic cardiomyopathy phenotype compared to healthy controls using 3T cardiac magnetic resonance imaging (CMR).

**Methods:** This study included 20 participants: 10 patients (4 females, 6 males; aged 14–64 years, mean age 43 years) with varying degrees of left ventricular hypertrophy (LVH) and 10 healthy young controls (aged 17–19 years). All patients underwent a comprehensive CMR protocol, including cine imaging, rest perfusion, T2-weighted imaging, and late gadolinium enhancement (LGE). In contrast, the healthy controls underwent cine imaging only, without LGE or perfusion studies. Imaging was performed and analyzed by two independent operators to ensure consistency and accuracy.

**Results:** Myocardial crypts were identified in 3 of the 10 patients with LVH. None of the 10 participants in the control group exhibited myocardial crypts.

**Conclusions:** Myocardial crypts appear to be more frequently observed in patients with suspected hypertrophic cardiomyopathy phenotype compared to healthy individuals. This finding suggests a potential association between myocardial crypts and hypertrophic phenotypes, although further studies are needed to confirm their prevalence in healthy populations and their diagnostic significance.

## Dissecting the Role of Extracellular Vesicles (EVs) in Trained Immunity: Implications for Transplant Rejection

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***Keywords:*** *transplantation, innate immune memory, trained immunity, extracellular vesicles*

**Background:** Transplantation is a life-saving procedure for patients experiencing organ failure, restoring vital functions and extending survival. However, certain transplants—such as hand, larynx, tongue, uterus, and facial transplants—primarily aim to enhance quality of life rather than survival and carry significant risks associated with surgery and lifelong immunosuppression. Despite advancements, the average lifespan of a heart or kidney transplant is approximately 10 years due to complications such as infections and immune system activation (allorecognition), ultimately leading to graft rejection. Both arms of the immune system contribute to rejection, including the innate (macrophages, dendritic cells (DCs), and neutrophils) and the adaptive (B and T cells). Macrophages play a dual role in allograft transplantation, either promoting an inflammatory response or creating a tolerogenic environment.

Although therapeutic approaches targeting the adaptive immune response have shown promise, long-term graft survival rates remain inadequate, indicating the presence of additional, unrecognized mechanisms of allograft rejection. It is hypothesized that trained immunity pathways play a key role in driving graft loss. Trained immunity, a recently identified functional adaptation of the innate immune system, involves non-permanent epigenetic and metabolic reprogramming of innate immune cells. Trained macrophages, in particular, enhance graft rejection by upregulating co-stimulatory molecules and producing pro-inflammatory cytokines, leading to robust graft-reactive immune responses and eventual organ failure.

Extracellular vesicles (EVs), small bi-layered particles of varying sizes released by numerous cell types, play a crucial immunomodulatory role in intercellular communication and transplantation biology.

**Hypothesis:** EVs derived from multiple sources, including bacteria, transplanted tissue, and damaged endothelial cells, induce TI in macrophages, neutrophils, and DCs, driving transplant rejection through proinflammatory cytokine release.

**Aim:** To assess whether EVs isolated from (i) bacteria, (ii) transplanted tissue, or (iii) damaged endothelial cells can induce TI in macrophages, neutrophils, and DCs, thereby promoting transplant rejection.

**Objectives:**

1. Isolate and validate EVs from different sources, including Staphylococcus aureus, hypoxia-damaged endothelial cells, and rejected transplant tissue;
2. Assess EV-induced TI in macrophages, DCs, and neutrophils;
3. Determine the ability of TI-trained innate immune cells to drive alloreactivity;
4. Investigate epigenetic and metabolic changes associated with TI in immune cells.

**Impact:** Graft rejection is a complex process, with growing evidence indicating that innate immune cells play a central role in both acute and chronic rejection by secreting inflammatory mediators that activate adaptive immune responses. The accumulation of innate immune cells within donor organs is associated with transplant rejection, as macrophages and DCs primed by allogeneic antigens drive the rejection process. However, not all macrophages contribute to graft loss. Different macrophage subpopulations can regulate the immune response and promote graft survival, depending on their phenotype and function. EVs have demonstrated potential in modulating innate immune cell polarization and fostering a tolerogenic environment. Identifying the signaling pathways that regulate innate immune cell function could reveal novel therapeutic strategies to enhance allograft survival and mitigate transplant rejection.

## Echocardiography-Guided Ambulatory Treatment for Reduction of Hospitalizations in Advanced Heart Failure Patients

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***Keywords:*** *advanced heart failure, outpatient monitoring, Tissue Doppler echocardiography, left ventricular filling pressure, rehospitalizations*

**Background:** In advanced heart failure (HF), a clinical examination alone may fail to detect subclinical HF deterioration in outpatient settings.

**Objective:** The aim of the study was to evaluate the effects of frequent outpatient monitoring with a rapid echocardiographic assessment of hemodynamic parameters on re-hospitalization rates of advanced HF patients after the discharge.

**Methods:** 103 patients with NYHA III–IV functional class, despite the optimal guideline-recommended therapy, left ventricular (LV) ejection fraction 1 hospitalization for HF decompensation within the past year were followed-up for 18 months.

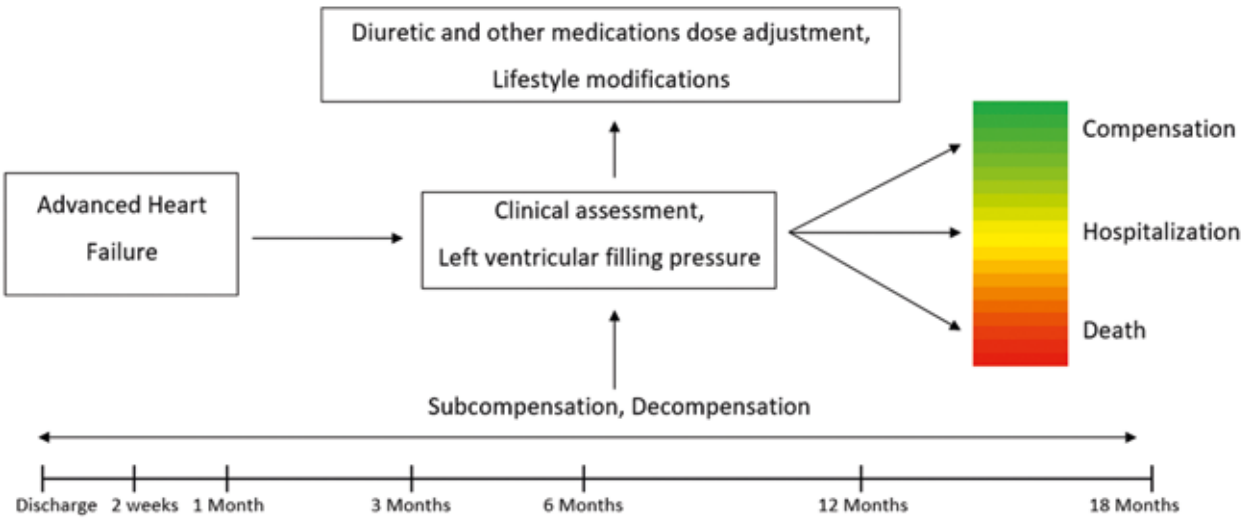


**Figure 1.** Workflow chart of the study.

Intensive monitoring included 6 outpatient visits 2 weeks, 1, 3, 6, 12 and 18 months after the discharge (Figure 1). During the outpatient visits patients underwent physical examination and echocardiographic assessment of LV filling pressure. Based on the clinical evaluation of volemic state and echocardiographic data, patients with signs of worsening congestion and high LV filling pressure (E/e' >15, left atrial volume index >35 mL/m2) were managed by intensification of diuretic treatment (administration of double doses of oral or additional short-term low dose intravenous loop diuretics) in addition to the guideline-recommended medical treatment (Fig. 1. Workflow chart of the study).

**Results:** Patients average age was 68.3 ± 1.1 years, 64.1% were men, 81.6% had a history of coronary artery disease. During the 18 months of follow-up a total of 47 hospitalizations were observed, 54.4% of patients remained free from hospitalizations. The average time to hospitalization was 16.4 ± 0.9 months (95% CI: 14.6 - 18.1) (Figure 2). During the follow-up period 22 (21.4%) patients died (Fig. 2. Kaplan–Meier curve showing time to hospitalization for 18-months follow-up with intensive echocardiographic outpatient monitoring).

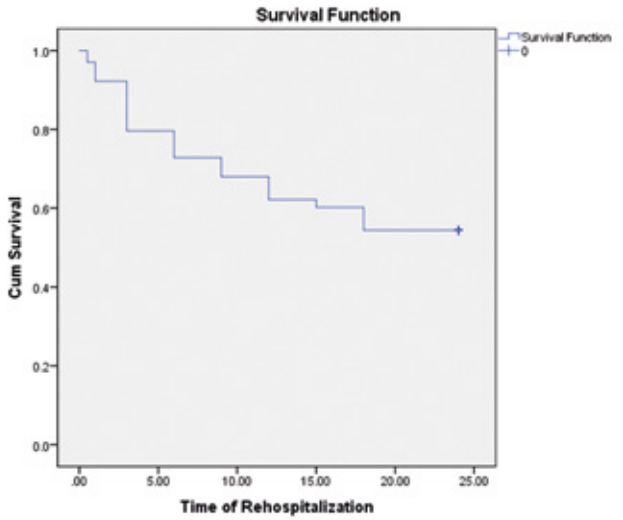


**Figure 2.** Kaplan–Meier curve showing time to hospitalization for 18-months follow-up with intensive echocardiographic outpatient monitoring.

**Conclusions:** Frequent outpatient monitoring with a rapid echocardiographic assessment of hemodynamic parameters may improve the hospitalization rates and prognosis of advanced HF patients at 18 months after the discharge.

## Encrusted Cystitis in Hospitalized Patients: A Retrospective Analysis of Urological Complications of COVID-19

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***Keywords:*** *encrusted cystitis, corynebacterium urealyticum, COVID-19, surgical treatment of cystitis, urinary tract infection*

**Introduction:** Encrusted cystitis (EC) is a rare but serious complication that may arise following infections caused by urease-producing bacteria, particularly Corynebacterium urealyticum. This condition is characterized by mucosal encrustations and significant bladder inflammation. The impact of COVID-19 on the development of EC has not been widely reported.

**Methods:** We conducted a retrospective analysis of seven patients (six men and one woman) aged between 55 and 69 years, all of whom were hospitalized for COVID-19 in 2021. Data were collected regarding their hospital stay duration, time to development of encrusted cystitis, urinary pH, urinary protein levels, urine cultures, CT findings, and surgical interventions.

**Results:** The average length of hospital stay for patients was 8.6 days. Encrusted cystitis manifested at intervals ranging from 1 to 12 months post-COVID hospitalization. Six patients underwent bladder catheterization during their hospital stay. Urinary analyses revealed a pH ranging from 8 to 9 and protein levels between 0.165 and 0.66 g/L. Cultures identified E. coli, C. urealyticum, and Streptococcus spp., while CT scans indicated stone densities near 500 HU. Surgical treatments varied, including mechanical cystolithotripsy, monopolar and bipolar TUR, as well as holmium and thulium laser therapies.

**Conclusions:** The occurrence of encrusted cystitis in patients post-COVID-19 hospitalization highlights the need for increased awareness and early diagnosis of this condition. Prompt surgical intervention, along with appropriate antibiotic therapy, may significantly improve patient outcomes. Future studies should aim to establish standardized treatment protocols for EC in this unique patient population.

## Potency and impregnability of Non-Invasive Ventilation in COPD Patients with Acute Respiratory Failure: A Compeer Case-Control Study

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**Keywords:** non-invasive ventilation (NIV), chronic obstructive pulmonary disease (COPD), acute respiratory failure (ARF), invasive mechanical ventilation (IMV), intensive care unit (ICU)

**Objective:** To evaluate the effectiveness and safety of non-invasive ventilation (NIV) as an alternative to invasive mechanical ventilation (IMV) in chronic obstructive pulmonary disease (COPD) patients with acute respiratory failure (ARF) meeting European Respiratory Society (ERS) criteria for mechanical ventilation.

**Design and Setting:** A matched case-control study conducted in an intensive care unit (ICU).

**Patients and Intervention:** Seven COPD patients with advanced ARF received NIV, matched with seven controls who underwent IMV. Patients were matched on age, forced expiratory volume in one second (FEV1), Simplified Acute Physiology Score II (SAPS II), and arterial pH at ICU admission.

**Methods and results:** NIV failed in four patients, requiring intubation, defined as inability to maintain SpO2 > 88% or PaCO2 < 60 mmHg. No significant differences were observed in mortality rate, mean duration of mechanical ventilation (14.2 ± 3.5 vs. 15.6 ± 4.2 days), or median lengths of ICU (10.5 ± 2.8 vs. 11.9 ± 3.5 days) and post-ICU stay (14.1 ± 3.2 vs. 15.8 ± 4.1 days) between groups. The NIV group exhibited fewer complications (P = 0.01) and a trend toward reduced prolonged mechanical ventilation (P = 0.056).

**Conclusions:** In COPD patients with advanced hypercapnic ARF, NIV demonstrated a high failure rate but offered advantages over IMV, including reduced complications. Delayed intubation was non-deleterious in patients who failed NIV, while avoiding intubation conferred better outcomes.

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## Neurology, Neurodiagnostics & Emergency Medicine

### Chronic jugular vein stenosis associated with widespread cerebral hypoperfusion and hypoxia in a Multiple Sclerosis cohort

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***Keywords:*** *Multiple sclerosis, cerebral hypoperfusion, internal jugular vein stenosis, near-infrared spectroscopy (NIRS), regional cerebral tissue oxygen saturation (rctSO$_2$), neurodegeneration*

**Background:** Widespread cerebral hypoperfusion has been extensively reported in multiple sclerosis (MS) and is attributed to various mechanisms, including elevated vasospastic endothelin-1, hypoxia-inducible factor-1 (HIF-1) expression in oligodendrogliopathy, and hypoxia-induced inflammation via the prolyl hydroxylase pathway. However, the role of venous vasculature impairment in MS remains largely unexplored. Internal jugular vein (IJV) stenosis and thrombosis have been documented in MS patients, yet their potential impact on cerebral oxygenation is not well understood.

**Methods:** This study investigates the relationship between IJV stenosis and cerebral hypoxia in 35 MS patients with confirmed IJV stenosis who underwent microsurgical plastic enlargement of the jugular vein using either saphenous or pericardial patch grafts. All patients met the revised McDonald criteria for relapsing-remitting MS and had stenosis confirmed by color-Doppler ultrasound and venography. Intraoperative regional cerebral tissue oxygen saturation (rctSO$_2$) was monitored using near-infrared spectroscopy (NIRS) via bilateral frontal lobe sensors. Measurements were recorded at three intervals: pre-clamping, intra-clamping, and post-clamping of the IJV.

**Results:** A significant reduction in rctSO$_2$ was observed during IJV clamping, decreasing from 77-82% pre-clamping to 46-58% intra-clamping ($p < 0.05$). Post-clamping values returned to 75-79% ($p < 0.05$). Concurrently, jugular venous pressure (JVP) increased from 4-8 mmHg pre-clamping to 15-30 mmHg during clamping. These findings highlight a potential link between chronic IJV stenosis and cerebral hypoperfusion, contributing to a hypoxic state in MS.

**Conclusions:** Results underscore the significance of venous circulation in MS pathophysiology, reinforcing the need for further research using NIRS and functional MRI (fMRI) to elucidate the impact of venous dysfunction on neurodegeneration and disease progression.

### Electroneuromyography in the AI Era: An Indispensable Ally for Precision Diagnosis

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***Keywords:*** *electroneuromyography, tunnel syndromes, AI*

**Background:** CTS results from median nerve compression in the carpal tunnel, causing symptoms such as pain, swelling, numbness, and weakness in the hand. It shares characteristics with rheumatic diseases like rheumatoid arthritis (RA) and osteoarthritis (OA). Electroneuromyography (ENMG) is a crucial diagnostic tool for confirming CTS.

**Objective:** To assess the accuracy of AI tools in evaluating the likelihood of carpal tunnel syndrome (CTS) in patients with hand or wrist pain, swelling, and numbness.

**Methods:** We conducted a cross-sectional observational study involving 90 patients (2 males /2.2%/ and 88 females /97.8%/, mean age 54.1 ± 10.9 years) presenting with pain, swelling, and nocturnal numbness. Diagnostic tests included CBC, urinalysis, CRP, RF, ACPA, routine biochemical markers, hand x-ray, ultrasonography, and rheumatologist consultation. An AI tool (ChatGPT by OpenAI) was used to assess CTS likelihood. ENMG of the upper extremities confirmed the diagnosis.

**Results:** RA was diagnosed in 11 (12.2%), OA – in 18 (20%), fibromyalgia – in 6 (6.7 %) patients, and no rheumatic disorders were found in 55 (61.1%). Initially, the AI estimated CTS probability at 5.6-20% (4 to 18 patients). After including rheumatic diagnoses, the estimate remained almost unchanged - 6.7 - 20% (6 to 18 patients). ENMG revealed CTS in 68 patients (75.6%), with 56 bilateral cases (82.3%). Severity varied: mild in 18 patients (26.5%), moderate in 11 (16.2%), and severe in 39 (57.3%). Only 27 patients (39.7%) with CTS had concurrent rheumatic pathologies.

**Conclusions:** Nowadays, numerous efforts are being made to integrate AI tools into the diagnosis of various medical conditions, with the potential long-term goal of replacing investigations that require human

involvement. However, these advancements are not yet applicable to peripheral neuropathies, particularly CTS, where ENMG remains an indispensable diagnostic tool. Symptoms of pain, swelling, and numbness in the hands may indicate CTS and necessitate ENMG in diagnostic evaluations.

## Is It an Emergency? Diagnosing Common Ambulance Complaints in Armenia

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***Keywords:*** *prehospital care, emergency systems, ambulance utilization, hypertension*

**Introduction:** The World Health Organization has stated that emergency conditions such as trauma, myocardial infarction, and stroke contribute to over 50% of mortality and over 40% of the burden of disease globally. A preponderance of this burden falls on low- and middle- income countries (LMICs). Improvement in emergency medical services (EMS) are paramount to decrease morbidity and mortality in LMICs and globally. A lack of uniform data collection and analysis hinders system improvement efforts. This is also true in the Republic of Armenia, where our previous research has shown that the ambulance system is over-burdened with patients who present with concerns not **requiring in-hospital treatment.**

**Objective:** This study expands on findings from previous descriptive research to further delineate the associations between common chief complaints and final diagnoses in adult EMS patients in the Republic of Armenia with an aim of guiding systems improvement by minimizing overuse of the ambulance system.

**Methods:** For this descriptive retrospective cohort study, we utilize a de-identified version of a database produced by Locator, provided by the Ministry of Health of Armenia (MoH), which includes information from January 1, 2016 to July 31, 2022.

**Results:** Preliminary analysis shows that among adult EMS complaints (n=2,022,218), high blood pressure was the most prevalent in the capital city, Yerevan (34.4%), and complaints of unspecified acute condition (27.4%) and high blood pressure (26.2%) were the most prevalent in the rural regions (marzes). Statistical analyses looking at the associations between chief complaints and final diagnoses reported are ongoing and will be presented at the conference.

**Conclusions:** Once final analysis is performed, opportunities for improvement will be identified, and a corrective plan for quality improvement will be undertaken. Analysis is currently underway.

# CONGRESS ABSTRACTS

# I. ORAL PRESENTATIONS

## Digital Health, Health Systems & Medical Education

### Artificial Intelligence (AI) versus the Boards: Pitfalls and Potential

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***Keywords:*** *artificial intelligence, language model, asthma, internal medicine boards, AI*

**Introduction:** Artificial Intelligence (AI) is a rapidly advancing technology that allows machines to replicate human comprehension, learning, decision-making, and autonomy [1]. With the expanding influence and addition of AI in medical, educational, and clinical realms, it is important to assess its reliability and limitations. In this study, we evaluated the performance of various AI platforms in answering specialized board-style practice questions. We hypothesized that current AI models are not sufficiently developed yet to achieve total accuracy and are unfit for full integration into professional practice.

**Methods:** We asked five different AI platforms (Claude, ChatGPT, Google Gemini, DeepSeek, and xAI) nine practice pulmonology board questions (Table 1) written by a board-certified internal medicine physician and educator.

**Results:** The average performance across the five platforms was 71.3%, with scores ranging from 66.7% to 77.8%. Claude and DeepSeek performed the highest, scoring 77.8%, while ChatGPT, Gemini, and xAI scored the lowest, earning 66.7%. Question-by-question results are shown in Table 2. We found that AI platforms struggled to accurately answer questions involving complex next-step clinical decision-making (Questions 1 and 2) and closed-ended questions requiring definitive responses (yes/no/maybe, Question 5).

**Discussion:** AI platforms have access to all available public medical knowledge. Therefore, achieving perfect accuracy on board-style questions, especially those grounded in well-established guidelines, is expected. Our study demonstrates that AI falters when confronted with complex or highly specialized content. Although AI can process and retrieve information efficiently, it lacks the depth of understanding needed for accurate application in specialized areas.

**Conclusion:** While AI systems have the potential to enhance medical education and clinical support, they are not developed enough to guide clinical decision-making. This project will drive future research endeavors aimed at refining how AI platforms interpret and apply specialized medical information as more patients turn to AI for self-diagnosis and treatment.

References:
1 Stryker, C., & Kavlakoglu, E. (2025, May 2). What is Artificial Intelligence (AI)?. IBM. https://www.ibm.com/think/topics/artificial-intelligence

**Table 1.** The 9 questions that five different AI platforms had to respond to.

| Question Number | Question | Correct Answer |
|---|---|---|
| 1 | You are seeing a 22-year-old gentleman in the clinic with intermittent dry cough. He states that for the last 6 months, he sometimes has to catch his breath and has an annoying dry cough. There has never been any phlegm production. He denies having fevers or having an upper respiratory tract infection. He likes to jog, but notes that when he pushes himself, his breathing becomes exceedingly labored near the end. His vital signs are within normal limits. His physical exam is notable for end-expiratory wheezing. Upon review of systems, he notes that his difficulty has progressed during the late fall and early winter months, in particular in the evening. He was never diagnosed with asthma as a child. There is no correlation to any particular foods. What would be your next step in management?<br>**A. Trial of an albuterol inhaler**<br>**B. Incentive Spirometry testing**<br>**C. Pulmonary function testing**<br>**D. Reassurance**<br>**E. Chest x-ray** | **B** |
| 2 | You are seeing a 25-year-old female in the clinic. She comes in with complaints of progressive shortness of breath. She states that her boyfriend realized that she is wheezing when she breathes. She notes difficulty with exercise as well as a recent decrease in her ability to smell and taste food. She feels congested as well. The patient has no significant past medical history. She has never required surgery. On physical exam, you note end-expiratory wheezing. The patient sounds congested when she speaks. She has tenderness upon palpation of her maxillary sinuses. He also notes gray-colored mucoid bilateral nasal polyps. A review of her medication shows that she takes turmeric, multivitamins, iron supplements, and aspirin. What would be your next step in management?<br>**A. Empiric trial of albuterol**<br>**B. Spirometry testing**<br>**C. Pulmonary for testing**<br>**D. Chest x-ray**<br>**E. Azithromycin**<br>**F. Discontinue all her medications and reassess** | **F** |

| | | |
|---|---|---|
| 3 | You are seeing a 37-year-old female patient in clinic. She was diagnosed 7 years ago with aspirin-exacerbated respiratory disease. At diagnosis, she had presented with asthma-like symptoms, including dry cough and wheezing, and was found to have sinusitis and nasal polyps. Aspirin was discontinued, but she did require corticosteroid injections for her nasal polyps. She has unfortunately gained more than 75 pounds during the last 5 years, and her BMI is now 40. She has significant pain in her knees and hips when she walks. He would like to avoid opiates. Which of the following would be the most appropriate systemic therapy for her in addition to lifestyle modifications?<br>**A. Naproxen**<br>**B. Ibuprofen**<br>**C. Diclofenac**<br>**D. Celecoxib**<br>**E. None of the above** | **D** |
| 4 | You are seeing a 45-year-old female patient in the clinic. She has a history of aspirin-exacerbated respiratory disease. She was diagnosed in her early 30s. She has had success with the use of an as-needed albuterol and montelukast to control her asthma symptoms. She was, unfortunately complaining of chest tightness a few weeks ago and was seen in urgent care, where there were subtle ST-segment depressions on her EKG with normal serial troponins. The patient completed an exercise treadmill stress test, revealing demand ischemia. Her cardiologist feels that she is at significant risk of having progressive coronary artery disease over the next 1-2 decades. What would be your next step in management?<br>**A. Aspirin desensitization**<br>**B. Addition of dupilumab therapy to her regimen**<br>**C. Add LABA and corticosteroids to her regimen**<br>**D. Only use clopidogrel instead of aspirin** | **A** |

## Evaluating Current Situation of Armenia's Electronic Healthcare System

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***Keywords:*** *electronic healthcare system (E-health), data management, digital literacy, data accuracy, data integrity, standards*

**Background:** Aligned with the MOH's policies and government-approved roadmaps, Armenia has embarked on a digital transformation of its healthcare system. This process began in 2017 with the introduction of the electronic healthcare system, managed by a delegated private Operator.

**Objective:** To assess the legal and technical framework of e-health implementation in Armenia, identifying gaps, challenges, and potential improvements.

Methods: A review of legislative amendments, program implementations, and training initiatives was conducted. In 2020, amendments to the Law "On Medical Assistance and Service to the Population" defined the e-health system and its regulatory requirements. In 2021, a development program was approved, and digitalization officers, in collaboration with the Operator, mapped necessary modules and developed digital components. Approximately 1,500 doctors received training, and around 2,400 computers were distributed to healthcare organizations. Subsequently, NIH organized targeted online training sessions for each newly implemented digital component. These sessions helped identify challenges and gaps through continuous communication with healthcare workers and digitalization officers.

**Results:** The electronic healthcare system's legal framework is operational, and multiple components have been implemented. However, resource misallocation and a limited digital mindset among users hinder system efficiency. The platform currently serves as an input tool, with users lacking the skills to analyze data or ensure its accuracy and integrity.

**Conclusions:** To enhance the quality of healthcare services through reliable data, MOH proposes three strategic steps: comprehensive data management by involving patients and ensuring data ownership and control; capacity building through training healthcare professionals in digital literacy and data application; and technical advancements, prioritizing telemedicine integration through infrastructure upgrades. In 2025, the NIH, supported by the Hovnanian Foundation, plans to train 1,200 doctors and launch public awareness campaigns to promote citizen engagement in the digital health transformation. This approach aims to bridge gaps, foster a digital mindset, and modernize Armenia's healthcare system.

## Introduction of Telemedicine in Armenia and Possible Benefits

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***Keywords:*** *telemedicine, healthcare services, e-health system, telemedicine pilot project*

**Background:** In remote areas of Armenia, healthcare services are provided by family nurses under the supervision of doctors at rural medical posts. A key challenge is efficiently allocating resources to ensure quality healthcare in these areas. The integration of telemedicine is a central component of the new Primary Healthcare (PHC) model, aiming to improve communication and collaboration between physicians and nurses at rural health posts.

**Objective:** To evaluate the challenges and effectiveness of integrating telemedicine into Armenia's new PHC model.

**Methods:** In 2020, legislative changes defined telemedicine regulations for doctor-to-doctor and doctor-to-patient interactions. Telemedicine, is the one of key components of the new PHC model, facilitates collaboration between physicians in outpatient facilities and nurses at rural health posts. While Armenia's legislative framework includes the MOH's Order No. 42-N of 2022 regulating telemedicine, it falls short of fully supporting this model's requirements. The MOH gathered insights through national and international discussions to guide telemedicine integration. A review of Armenia's telemedicine experiences was conducted, identifying factors behind both successes and failures. Relevant methodology was clarified: strategic actions that should be guided by the implementation and development phases for the systematic implementation and management of the component. Work was carried out to have a telemedicine tool in the e-health system.

**Results:** A pilot telemedicine project will begin in November 2024 in 13 rural medical centers and 22 associated posts, running through May 2025. Healthcare staff will receive training and be equipped with tablets, funded by the Global Fund, to assess the tool's suitability and the readiness of staff to use telemedicine effectively.

**Conclusions:** The pilot will assess the usability of telemedicine tools, staff competence, and readiness to adopt these tools. Gaps will be identified, and recommendations for necessary legal amendments will be proposed based on the pilot's findings.

## Transforming Medical Education in Armenia through Learn with OPEN: An Online Learning Platform for Continuing Medical Education

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**Background:** In response to Armenia's 2019 mandate for Continuing Medical Education (CME) and the heightened demand for accessible online learning opportunities during COVID-19, Children's Hospital Los Angeles (CHLA) partnered with the Armenian Pediatric Association (APA) to launch Learn with OPEN (https://learnwithopen.org/). This bilingual platform (English/Armenian) is Armenia's first Learning Management System (LMS) dedicated to CME, offering free, accredited courses to primary healthcare (PHC) providers, and general pediatricians.

**Objectives:** Learn with OPEN aims to deliver free, accessible CME courses for healthcare professionals to promote evidence-based practice and improve the healthcare quality for Armenian children and families.

**Methods:** The platform provides a variety of CME opportunities including modular, interactive courses covering topics such as "Searching in PubMed" and "Evidence-Based Practice," along with podcasts, newsletters, and bilingual resources. Content is created by over 75 professionals, including CHLA faculty and APA members, ensuring it is tailored to local healthcare needs. The platform also hosts other initiatives such as Informatics fellowships and annual conferences in collaboration with the Armenian Eye Care Project (AECP).

**Results:** Learn with OPEN has developed an active user base of 1,908, with 1,100 newsletter subscribers and 400 course enrollments over the past three months. With 40 CME courses available in Armenian, the platform averages 1,000 unique monthly visitors, peaking at 3,500 during conferences. User feedback and analytics guide ongoing content refinement, enhancing engagement and satisfaction.

**Impact and Future Directions:** Learn with OPEN plans to expand beyond pediatric medical education with Armenia's National Institute of Health (NIH), broadening CME offerings across medical specialties. Digital certificate issuance will integrate with the Medical Professionals Register, streamlining CME credit tracking for Armenian healthcare professionals. These initiatives emphasize Learn with OPEN's dedication to advancing medical education in Armenia and fostering continuous professional development.

# Cardiovascular & Surgical Advances

## Development and Results of the Epilepsy Surgery in Armenia

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***Keywords:*** *epilepsy, surgery*

**Introduction:** Armenia is a developing country with a population of 3 million people and an epilepsy prevalence rate of 5 per 1,000 person-year. Approximately 30% of these patients have drug-resistant epilepsy, and half of them are potential candidates for epilepsy surgery.

**Objective:** The study aims to present a statistical review of efficacy of surgical management of epilepsy, based on our experience with the national epilepsy surgery program in Armenia, commenced in 2016. Retrospective assessment of the results of the cohort, showcases the relevance of the model of the program.

**Methods:** Our cohort consisted of 50 patients with lesional and one with non-lesional drug-resistant focal epilepsy. All patients underwent 3T MRI and Video-EEG monitoring (VEM). 18F-FDG PET scan of the brain was performed in 24 patients. Three patients underwent stereoelectroencephalography (SEEG). 18 patients underwent preoperative neuropsychological examination. Three patients had multiple pathologies, with surgical intervention targeting only epileptogenic zones.

**Results:** The majority of patients benefitted from surgery, with 47 (92.2%) being free of disabling seizures (Engel class I) at the time of the report. Four patients (7.8%) did not improve substantially (Engel class IV), with one of them on post-surgical follow up turning out to be having a genetic mutation resulting in Chromosome 15q11.2 deletion syndrome. Eighteen patients (35.3%) are currently ASM-free, fifteen (29.4%) are on monotherapy, fourteen (27.5%) are receiving dual therapy and four (7.8%) are on polytherapy. In 25 patients (49%) pharmacotherapy was stopped completely, or one of the ASMs was withdrawn.

**Conclusions:** The study exhibits the applicability of our model in managing lesional and non-lesional drug-resistant epilepsy, with more than 90% positive outcome value. Thus, based on our experience, we strongly believe the suitability of our model of the epilepsy surgery program to be implemented in the developing countries.

## Improving INR Control Through Digital Integration: A Study of Mechanical Valve Replacement Patients at NMMC

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***Keywords:*** *INR control, digital solution, time in therapeutic range, Armenia*

**Introduction:** Quality control of the International Normalized Ratio (INR) is essential to prevent life-threatening complications in patients on lifelong anticoagulation therapy with vitamin K antagonists after mechanical valve replacement. Time in Therapeutic Range (TTR) is a key indicator of INR control quality, which relies on comprehensive data collection. Missing INR values hinder effective management. To address these gaps, we propose a multicomponent digital tool integrated with the Nork Marash Medical Center (NMMC) electronic medical record (EMR) system to streamline INR data collection and improve patient outcomes.

**Objective:** This study aimed to identify factors affecting INR control quality and evaluate the completeness of recorded INR data to guide the digital solution's development.

**Methods:** A retrospective cohort study included 206 patients who underwent mechanical valve replacement at NMMC(2020–2021). A total of 135 patients with 75–180 days of INR follow-up were analyzed. INR data were gathered from medical records, laboratory networks, and patient-reported information. TTR was calculated using the Rosendaal method and categorized as <65% or ≥65%. Logistic regression was performed to identify predictors of TTR.

**Results:** The cohort (mean age: 55.3 years; 53.3% male) had a mean TTR of 47.5% (SD = 21.3), with 23.7% achieving ≥65% TTR. Missing INR values (20%) were supplemented via patient-reported data. Factors associated with <65% TTR included an INR target range of 2.5–3.5 (OR = 4.42) and hospital-based testing (OR = 8.75). Protective factors included employment (OR = 0.24), university education (OR = 0.17), and older age (OR = 0.92).

Conclusions: Suboptimal INR control was observed, with data gaps highlighting the need for a digital tool. The proposed tool will integrate with the local EMR, enabling patients, nurses, and physicians to track INR values in real-time, improve monitoring, and enhance anticoagulation therapy outcomes.

## Long-Term Survival Outcomes After Surgery for Type A Aortic Dissection: A Decade of Experience in Armenia

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***Keywords:*** *aortic dissection, survival, follow-up, Armenia*

**Background:** Type A aortic dissection is a life-threatening condition requiring urgent surgical intervention. Despite significant advancements in surgical techniques and perioperative care, long-term survival outcomes remain under-explored, particularly in low- and middle-income countries like Armenia.

**Objective:** This study aimed to assess the long-term survival outcomes and identify predictors of mortality in patients who underwent surgery for Type A aortic dissection in Armenia over a decade.

**Methods:** The study included 152 patients discharged after surgical treatment for Type A aortic dissection at the Nork Marash Medical Center (NMMC) from 2008 to 2018. Data were obtained from the NMMC electronic database, and the ARMED health system. All-cause mortality was assessed, with the latest information collected in mid-October 2024. Survival time was defined as the interval from discharge to death. Kaplan-Meier survival analysis was used to estimate survival rates, and comparisons were made using the log-rank test. Predictors of mortality were identified using a Cox proportional hazards model.

**Results:** The cohort (mean age: 56.6 years; 76.3% male) included 68.4% with DeBakey Type 1 dissections. Aortic valve replacement (AoVR) was performed in 15.1% patients. The mean follow-up time was 7.9±3.9 years, with a mortality rate of 23.7%. Kaplan-Meier analysis indicated a 14-year cumulative survival rate of 60–65%. No significant survival differences were observed between DeBakey Type 1 and Type 2 dissections (log-rank test, P = 0.255) or between patients with and without AoVR (log-rank test, P = 0.850). Age was the only independent predictor of mortality (HR 1.07, 95% CI 1.02–1.11, P = 0.003).

**Conclusions:** Patients discharged after surgery for Type A aortic dissection showed favorable long-term survival rates, comparable to international data. Age emerged as the sole independent predictor of mortality, underscoring the need for tailored postoperative care and ongoing monitoring, especially for older patients.

# Respiratory Medicine & Chronic Disease Management

## Analysis of Armenian Registry Data for Non-CF Bronchiectasis

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***K*eywords:** *bronchiectasis, Armenian register, standardized management*

**Background:** Non-cystic fibrosis bronchiectasis (non-CF BE) is a chronic respiratory condition associated with recurrent infections and impaired lung function. In 2024, Armenia joined the international non-CFBE registry, enabling unified data collection and research alignment. This study analyzes Armenian registry data to identify key trends, rare diagnoses, and gaps in care.

**Objective:** To evaluate the demographic, clinical, and treatment characteristics of non-CF BE patients in Armenia.

**Methods:** A retrospective analysis was performed using Armenian registry data, focusing on demographics, radiological findings, comorbidities, and clinical history. Descriptive statistics and categorical analyses summarized key findings.

**Results:** The registry included 21 patients (mean age: 11.3 years), with a clear male predominance (76.2%). Low birth weight was reported in 17.6%, and "failure to thrive" in 5.6%. A history of pneumonia was noted in 27.3%, and HRCT imaging confirmed cylindrical bronchiectasis in 85.7%, predominantly in the lower lobes, cystic bronchiectasis in 9.5%. Vaccination uptake was low: 16.7% received the pneumococcal polysaccharide vaccine (PPV23), 15% the influenza vaccine, and 10% the COVID-19 vaccine. Common comorbidities included asthma (12.5%) and gastro-esophageal reflux disease (6.25%). Rare diagnoses included Primary Immunodeficiencies, Primary Ciliary Dyskinesia, and post-infectious bronchiectasis following severe pneumonia.

**Conclusions:** The integration of Armenia into the international non-CF BE registry facilitates comprehensive and standardized research. Findings under-

score the need for improved vaccination coverage, enhanced diagnostic protocols, and tailored management strategies. Addressing these gaps could significantly improve outcomes for non-CF BE patients in Armenia. Future studies should include longitudinal data to track disease progression and intervention efficacy.

## Prevalence of Non-CF Bronchiectasis in Children Presenting with Chronic Cough: A Retrospective single center HRCT Analysis

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***Keywords:*** *chronic cough, bronchiectasis, non-cystic fibrosis bronchiectasis (non-CF BE), high-resolution computed tomography (HRCT), nodules*

**Background:** Chronic cough is often linked to non-cystic fibrosis bronchiectasis (non-CF BE), a condition detectable via high-resolution computed tomography (HRCT). This study evaluates HRCT findings in children with chronic cough to assess the prevalence and radiological patterns of non-CF BE.

**Objective:** To analyze HRCT imaging in a pediatric cohort with chronic cough, focusing on prevalence and detailed radiological patterns of non-CF BE and associated findings.

**Methods:** A retrospective analysis was performed on 343 children (aged 2–18 years) referred to Arabkir Medical Center (2019–2024). HRCT scans, performed using a Canon Aquilion Lightning CT scanner, were analyzed to identify bronchiectasis types, affected lung regions and other abnormalities.

**Results:** Of 343 children, 21 (6%) were diagnosed with non-CF BE, with a male predominance (77.2%). HRCT revealed bronchiectasis patterns: combined lower lobe involvement in 12 cases, multiple lobe involvement in 4 cases, isolated lower lobe involvement in 5 cases of which cylindrical bronchiectasis (BAR 0.8 to 3) in 2 cases. Additional findings such as nodules and tree-in -bud pattern included left lower lobe only (2 cases), middle lobe-only (1 case), lower lobes only (4 cases) and extensive multi-lobe involvement (3 cases). These findings often correlated with primary diagnoses of post-infectious bronchiectasis (e.g., tuberculosis or severe pneumonia) and underlying conditions such as primary ciliary dyskinesia.

**Conclusions:** HRCT highlights distinct radiological patterns in pediatric non-CF BE, with a predilection for lower lobe involvement and additional findings such as nodules. These observations emphasize HRCT's critical role in early diagnosis and tailored management. Future studies should explore the relationship between radiological patterns and clinical outcomes.

## The Results of a Decentralized Asthma Care Centre Prototype Functioning During the War and Blockade in Artsakh

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***Keywords:*** *Artsakh, asthma care, allergy, sensitization*

**Background:** Access to asthma care in remote regions is limited, especially during crises such as war and blockades. In Artsakh, a decentralized asthma care center was established to manage asthma and allergies. In 2023, the blockade and war led to the displacement of patients, reducing the number under care from 89 to 70. The remaining patients continued care at Arabkir Medical Centre, while others left the country.

**Objective:** To evaluate the effectiveness of a decentralized asthma care model during extreme crises.

**Methods:** Data from 70 displaced asthma patients were analyzed, focusing on allergen sensitization, comorbidities (allergic rhinitis and atopic dermatitis), and treatment outcomes. Sensitization patterns were classified as monosensitization (single allergen) or polysensitization (multiple allergens). The center operated with continuous staff education, remote connection to a tertiary facility, and standardized treatment protocols.

**Results:** Among the 70 patients, 35 (50%) had asthma and allergic rhinitis, 2 (2.9%) had asthma and atopic dermatitis, and 1 (1.4%) had all three conditions. Sensitization patterns revealed 18 children (25.7%) with monosensitization and 17 (24.3%) with polysensitization. The most common allergens were dust mites (34.3%, 24 children), grass pollen (22.9%, 16 children), mold (17.1%, 12 children), and pollen (8.6%,6 children). Sensitization to birch, cat, and dog allergens ranged from 2.9% to 4.3%. Despite displacement and limited resources, asthma and allergy management were maintained.

**Conclusions:** This decentralized care model effectively managed asthma and allergies under crisis conditions, highlighting the importance of minimal investment, strategic planning, and continuous staff education. The model is replicable in other resource-limited, conflict-affected regions.

## Endocrinology, Metabolic Disorders & Public Health

### A Qualitative Descriptive Study of Barriers to and Facilitators of Self-Management of Type 2 Diabetes Among Armenian Americans

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***Keywords:*** *diabetes, type 2, adherence, management, qualitative study, descriptive qualitative, semi-structured interviews, culture, barriers, facilitators*

**Background:** Diabetes is a major community health concern, affecting 37.3 million Americans. It has a tremendous impact on the physical, emotional, social, and financial wellbeing of individuals and their families. Adherence to a diabetic therapeutic regimen is a crucial, yet complex, ongoing challenge. The literature has identified many barriers to adherence to a diabetic therapeutic regimen. It is estimated that over half a million Armenians live in the Greater Los Angeles, many of whom have diabetes. However, there is a dearth of scientific studies related to diabetes in the Armenian population in the United States.

**Purpose:** The purpose of this qualitative descriptive study, which is guided by the Health Belief Model, was to examine perceived facilitators of and barriers to adherence to a therapeutic regimen for self-management of diabetes among Armenians living in Los Angeles, California.

**Methods:** A qualitative descriptive design was used. Purposive and snowball sampling were utilized to recruit 30 participants. After each participant consented, demographic data were obtained by telephone, followed by the audio-recorded semi-structured interview. The interviews were transcribed, and the Armenian transcripts were translated and back translated. Data were organized and analyzed using NVivo (Version 14).

**Results:** The following themes emerged from the content analysis: having a buddy, and perceived threat of diabetes as facilitators; relationships with provider and family perceived as both facilitators and barriers; and cultural meaning of food, the meaning of diabetes, self-treatment, time, emotional barriers, physical the need for education as barriers to adherence to a diabetic therapeutic regimen.

**Conclusions/Implications:** This research has the potential to advance awareness of the interface of culture and chronic disease management. Adherence to a diabetic therapeutic regimen is crucial yet very complex and multifactorial for Armenians living in Los Angeles. Individualized diabetes self-management education is crucial in empowering individuals with diabetes to adhere to diabetic therapeutic regimen. While this study contributes to bridging this gap in the literature, it is highly recommended that healthcare researchers prioritize further studies among the Armenian population It is also essential to conduct studies that would explore health beliefs and health related behaviors of this population, especially the beliefs, attitudes, and the behaviors as they relate to chronic disease management in general and diabetes in particular.

### Comparative analysis of the effectiveness of different methods of correcting the immune-endocrine state in patients with autoimmune thyroiditis, obstructive sleep apnea and morbid obesity

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***Keywords:*** *Immune-endocrine disorders, autoimmune thyroiditis (AT), obstructive sleep apnea (OSA), morbid obesity, incretin receptor agonists, Continuous Positive Airway Pressure (CPAP)*

**Background:** In the literature available to us, we have not found any comprehensive study on the inclusion of incretin receptor agonists and CPAP in the replacement therapy of patients with autoimmune thyroiditis, obstructive sleep apnea and morbid obesity.

**Objective:** To perform a comparative analysis of the efficacy of different therapeutic approaches in patients diagnosed with autoimmune thyroiditis, obesity, and sleep apnea, evaluating the impact of combined versus non-combined treatment modalities on immune-endocrine parameters and quality of life outcomes.

**Methods:** 146 patients with autoimmune thyroiditis, obstructive sleep apnea and morbid obesity were divided into 3 clinical groups depending on the treatment. A comparative study of the results was conducted. The BMI, clinical manifestations according to the Zulewsky index and life quality indicators were assessed at the study baseline as well as 12 and 24 months later.

**Results:** Comparison between combined and isolated implemented methods efficacy had demonstrated significant discrepancy in clinical results with the most pronounced clinical effect of autoimmune thyroiditis combined therapy with the inclusion of incretin receptor agonists and CPAP.

**Conclusions:** The relatively higher effectiveness of the combined treatment method was proven, including the amplitude and speed of BMI reduction, a more pronounced and stable improvement in clinical manifestations and life quality indicators.

## Journey to Sustainability of Inpatient Glycemic Control

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***Keywords:*** *glycemic control, diabetes, hyperglycemia, inpatients, interdisciplinary, nurse empowerment, nursing*

**Introduction:** Hyperglycemic events are associated with potential increases in hospital mortality, infection rates, inpatient length of stay (LOS), and overall healthcare cost. Effective 2024, Hyperglycemic control became a Centers for Medicare and Medicaid Services Core measure urging organizations to assess inter-professional practices and implement collaborative strategies to improve hyperglycemic cases for the inpatient population. At a United States government hospital, it was determined there was a lack of provider customization and documentation leading to repeated hyperglycemic events for our inpatient population. We were able to successfully reduce hyperglycemic rates by 3 – 4 % hospital-wide based on 1000 patient days.

**Objective:** To reduce hyperglycemic events for the inpatient population, therefore reducing LOS, cost of care and diabetes complications. And to establish a protocol to ensure sustainability in decreasing hyperglycemia.

**Methods:** Interdisciplinary team was selected to identify gaps in hyperglycemic management using LEAN methodology; Education of new guidelines was provided to nurses and providers; Notification to primary providers by licensed nurses of all repeat hyperglycemic events with BG >200 mg/dL, at least 4 hours apart; Nurses to document notification to providers of hyperglycemic events; Providers to adjust and document glycemic management daily and as needed.

**Results:** We were successfully able to bring and maintain inpatient hyperglycemia to 16%, from October 2023 to October 2024.

**Conclusions:** Interprofessional collaboration improved hyperglycemia awareness which resulted in best practice of patient care delivery and outcomes. This has empowered nurses to be first-line responders of abnormal glucose occurrences in a timely manner. The new practice resulted in a shift in mindset of all clinicians regarding hyperglycemia events and glycemia management. Hyperglycemia management has now led to a Quality Department standard of practice.

## Prevalence and Incidence of Oral and Maxillofacial Pathologies Among Conscripts Undergoing Examination at No. 1 University Hospital in Yerevan, Armenia: A Retrospective Study

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***Keywords:*** *oral pathology, maxillofacial pathology, malocclusion, dental caries, temporomandibular joint, occlusal examination, chewing efficiency, agapov's index, oral health assessment*

**Objectives:** This study aims to assess the prevalence and incidence of oral and maxillofacial pathologies among conscripts in the Republic of Armenia.

**Methods:** Between 2023 and 2024, 355 conscripts undergoing compulsory military service were examined based on official referrals from general dentists at their local clinics. The age of the conscripts ranged from 16 to 25 years, with a mean age of 19.4 ± 1.08 years. The study included observations from eight regions of Armenia: Aragatsotn, Armavir, Lori, Kotayk, Shirak, Syunik, and Yerevan. Clinical examinations were conducted, and occlusal jaw X-rays in frontal and lateral positions, temporomandibular joints X-rays in both closed and maximally open positions, ultrasound examinations, and head CT scans were performed. The Agapov's chewing efficiency test served as the primary index for assessing oral health and military fitness, with a score below 50% deemed unfit for service. Study outcomes were analyzed using percentages, means, standard deviations, and tests of proportions, with a significance level set at $P<.05$.

**Results:** The mean Agapov's index did not significantly differ across regions, ranging from a minimum of 58.6% to a maximum of 66.0%. The majority of conscripts were from the Lori region (93 out of 355), yet the incidence of oral health morbidity leading to military unfitness was lower than in other regions (12.9%). The Shirak region exhibited the highest burden, with 48.1% of conscripts deemed unfit due to malocclusion. In contrast, the percentage of unfit conscripts in other regions ranged from 22.5% to 25%. Malocclusions and multiple caries, along with their complications, were the main diagnoses for unfitness across all regions.

**Conclusions:** The delayed detection of dental and maxillofacial pathologies imposes a substantial financial burden on the state due to the costs associated with examination requests. Nearly 25% of observed conscripts are exempted from compulsory military service due to untreated dental issues and malocclusions. Implementing methods for the timely detection

and treatment of oral pathologies could significantly enhance the number of conscripts deemed fit for military service. The lack of timely detection of dental and maxillo-facial pathologies leads to a large financial burden on the state, directed at examine requests. Almost a quarter of observed conscripts are exempted from compulsory military service due to the lack of timely treatment of teeth and malocclusions. Suggesting methods for timely detection and treatment of oral pathologies can play a significant role in improving the quantity of conscripts fit for military service in the army.

## Mental Health & Pediatrics

### Complex Trauma within the Armenian Community

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***Keywords:*** *complex trauma within the Armenian Community*

Complex Trauma is when a person or a community is exposed to traumatic events on an ongoing basis & the difficulties that arise as a result of adapting to or surviving these experiences. It is recurring, consistent, long-lasting and it can occur on individual or population level. This presentation provides information about history of oppression of the Armenian people and ways in which many years of massacres, the Armenian Genocide, Communism, poverty, living amongst dominant groups as a minority, immigration & migration, the 1988 Earthquake in Gyumri, and 1st and 2nd Wars for Nagorno Karabagh Wars collectively impacted the Armenian community. For the Armenian Community accumulative trauma from centuries of oppression, discrimination, massacres and the atrocities from the Genocide has "historical root."

This presentation will discuss how there has been a direct rejection to the Armenian identity on ongoing, systemic level due to facing continuous atrocities and its mental health effects. It will also discuss the adaptation and survival, resilience, coping strategies which have been present on individual and collective level across generations within the Armenian Community, and how these skills and abilities helped Armenians to not only survive but also thrive. Scientifically based mental health interventions and treatment tips when working with the Armenian Community members will be provided to help heal from historical trauma.

### Mental Health Issues among Armenian Teens: Current Situation, Trends and Implications for Future Programs

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***Keywords:*** *mental health, wellbeing, teens, HBSC Armenia*

Schoolchildren in Armenia are facing many challenges. Developmental changes, socio-economic instability have a profound effect on their well-being. It is crucial to understand the impacts of these issues on young people's mental health (MH).

To assess MH and related factors among Armenian teens we used data of Health Behavior in School-aged Children 2021/22 study (HBSC). HBSC is a cross-sectional study under the auspices of WHO with standard methodology held among schoolchildren of 11-17 years of age. It tracks self-reported health behaviors, health outcomes and social determinants. Data on mental health and well-being was analyzed using SPSS. Study showed high prevalence of psychosomatic complaints, particularly headaches, feeling low, irritable and nervous, presence of poor mental health symptoms, especially among elder girls ($p<0.01$). In comparison with previous rounds number of MH complaints has increased: 17% of elder teens (29% of girls) felt nervous, anxious or on edge; 20% were unable to stop worrying for more than half of the days during last 2 weeks; 82% felt unable to control important things in their life, mostly boys. Twenty percent of 15y.o. girls felt lonely most of the time or always; 70% of 17y.o. girls considered suicide. However, in comparison with other countries, Armenian teens reported higher than average scores in life satisfaction and MH well-being. Studies showed increase in MH symptoms among teens, many of them remain unsolved as MH providers are concentrated in a private sector. Health workers lack skills to provide consultancy for mental health disorders. Quality of MH services available in schools is insufficient, they are unevenly distributed, require more resources and trainings. The persistent MH concerns among teens highlight the need to implement targeted interventions. Placing schools and PHC facilities at the center of the delivery of mental health programs, broader partnerships and strong referral systems are crucial.

## The Achievements and Current Challenges of Child and Adolescent Health in Armenia

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***Keywords:*** *child, adolescent, health*

Since independence, the health of children of Armenia as well as the pediatric health system have been affected by various negative factors such as Karabagh wars, transition of economy, socioeconomic crisis of 90s, low financing, pandemic, influx of refugees etc. In these difficult circumstances, prioritization of Child Health by the Government, the contacts and support from partners from many countries, collaboration with WHO, the staff trainings in Armenia and abroad helped the system not only to survive, but to learn, to introduce new programs which resulted in many measurable achievements which have been recognized by the international community. However, the pediatric system still meets many challenges. Particularly, the infant mortality rate in Armenia currently is appx 8 per thousand of livebirths, which is three times less than in 1991; however, additional efforts are needed to reduce it furtherly. The children's immunization rate is more than 90%, but demonstrated the tendency to decrease over last years. Child development is on agenda since late 90s, there were implemented many programs, established the services country-wide, the neonatal screenings are introduced. Now there is a need to improve quality and accessibility of services, integrating those with care in the education and social sectors. The health and development of school-age children and adolescents are affected by many threats of 21st century such as unhealthy eating behaviors, lack of physical activity, mental health issues etc. It leads to the raising of the prevalence of obesity and other problems that in turn affect the health of future adults and cause multiple effects to the public health. Thus, the health system of Armenia, Armenian pediatricians currently have to tackle "old" and "new" problems, typical for both developed and developing countries. In these settings, the continuation and strengthening the collaboration with various partners, including those from Diaspora is important.

# Oncology & Diagnostic Strategies

## Optimizing Prostate Cancer Diagnosis: A Refined Clinical and Radiological Strategy

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***Keywords:*** *prostate cancer, biopsy, MRI, PSA density, PI-RADS, risk stratification, indeterminate, equivocal*

**Background:** Since the inception of the PI-RADS assessment framework in 2012, the application of multiparametric prostate MRI has markedly advanced the detection and management of clinically significant prostate cancer.

**Objective:** This review delineates the consensus strategy adopted by the Urology and Radiology Departments at Izmirlian Medical Center, which involves refining PI-RADS version 2.1 by excluding the indeterminate PI-RADS 3 category from lesion evaluation.

**Methods:** Between 2020 and 2024, a cohort of 600 patients underwent prostate mpMRI, with radiology reports omitting the PI-RADS 3 category. Lesions exhibiting PI-RADS 3 characteristics were reclassified as either PI-RADS 2 or 4, contingent upon ancillary features such as anatomical location, morphological form, T2-weighted imaging appearance, post-contrast imaging, and PSA density. These lesions were categorized as PI-RADS 2-3 or PI-RADS 3-4. Patients with PI-RADS 2-3 lesions were monitored through PSA surveillance, whereas those with PI-RADS 3-4 lesions underwent biopsy under ultrasound guidance for histopathological confirmation.

**Results:** Of the 600 assessments, only 5% of lesions presented with equivocal features. Ancillary criteria facilitated the reclassification of these lesions, with 30% being downgraded and 70% upgraded, thereby eliminating the need for the PI-RADS 3 category in reports. Significantly, 80% of patients with upgraded lesions were found to have clinically significant prostate cancer (Gleason score ≥ 7) in biopsy samples. Patients with downgraded lesions continued under PSA surveillance.

**Conclusions:** This refined approach minimizes unnecessary biopsies while preserving robust risk stratification for clinically significant prostate cancer. It addresses the clinical management ambiguities following mpMRI and highlights the necessity for ongoing research to validate and enhance modifications to the PI-RADS assessment.

## Public Perception of Blood-Based Cancer Surveillance – An Update

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***Keywords:*** *public health, cancer surveillance, ctDNA, and tumor markers*

**Introduction:** The development of a standardized screening protocol for malignancies has been systematically limited by high costs, diagnostic-associated morbidity, suboptimal sensitivity, and psychosocial burdens. Our previous pilot study (S2024) examined public perception on the desire to utilize blood-based cancer surveillance and identified key factors influencing acceptance, including trust in testing accuracy, accessibility, and perceived personal risk [1]. This study aims to further examine perceptions of blood-based cancer detection and compare responses from 2024 and 2025.

**Methods:** The anonymous Google Forms survey targeted a general population without demographic restrictions.

**Results:** S2024 consisted of 60 participants, and our 2025 survey (S2025) consisted of 40 participants, forming a combined participant pool of 100 subjects. All were given the same questionnaire. Most prominently, we observed an increase in believing that "cancer surveillance is a good thing," increasing from 96.70% to 100%, with mixed feelings dropping from 3.30% to 0.00% from S2024 to S2025, respectively. Additionally, fewer individuals are interested in blood-based cancer surveillance (88.30% (S2024) vs 80.00% (S2025)), and fewer would pay $1,000 out-of-pocket for this test (18.30% vs 15.00%). All results are shown in Table 1.

**Conclusions:** Our 2025 study builds on prior findings from 2024, suggesting that while many recognize the benefits of cancer surveillance, concerns about error and cost may outweigh perceived advantages. Although early detection is crucial for patient outcomes, this study further illustrates how psychological, financial, temporal, and social factors, alongside technological availability, may alter the choice in favor of cancer surveillance and limit its feasibility.

References:
1 Keushkerian, R., & Keushkerian, M. 2025. "Public Perception of Blood-Based Cancer Surveillance – A Pilot Study." Presented at the Southern California Conference for Undergraduate Research.

**Table 1:** Results of the 2024 and 2025 surveys investigating perception of blood-based cancer surveillance, coping, and cost.

| Questions | Answers | Percentage of Participants | | |
|---|---|---|---|---|
| | | S2024 | S2025 | Combined |
| **Do you feel that cancer surveillance is a good thing?** | **Yes** | 96.70% | 100% | 98.00% |
| | **No** | 0.00% | 0.00% | 0.00% |
| | **Mixed Feelings** | 3.30% | 0.00% | 2.00% |
| **Would a blood-based cancer detection test interest you?** | **Yes** | 88.30% | 80.00% | 85.00% |
| | **No** | 1.70% | 5.00% | 3.00% |
| | **Indifferent** | 10.00% | 15.00% | 12.00% |
| **If a blood-based cancer detection test had a high false positive rate, would that deter you from taking the test?** | **Yes** | 51.70% | 72.50% | 60.00% |
| | **No** | 11.70% | 10.00% | 11.00% |
| | **Maybe** | 36.70% | 17.50% | 29.00% |
| **If a blood-based cancer detection test was positive but a work-up was negative, would that lead to excessive stress?** | **Yes** | 58.30% | 57.50% | 58.00% |
| | **No** | 11.70% | 10.00% | 11.00% |
| | **Maybe** | 30.00% | 32.50% | 31.00% |
| **If a blood-based cancer detection test costs $1,000 out-of-pocket per year, would you be willing to pay for it?** | **Yes** | 18.30% | 15.00% | 17.00% |
| | **No** | 41.70% | 42.50% | 42.00% |
| | **Maybe** | 40.00% | 42.50% | 41.00% |

## Ophthalmology

# The Role of MMP-9 in Early Detection of Keratoconus: A Biomarker-Based Approach

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***Keywords:*** *MMP9, Keratoconus, Corneal Disorders*

**Background:** Keratoconus (KC) is a progressive ectatic corneal disorder characterized by thinning and irregularity, leading to visual impairment. Early detection is critical for effective management and prevention of severe disease progression. Matrix metalloproteinase-9 (MMP-9), an enzyme involved in extracellular matrix remodeling, has emerged as a potential biomarker associated with corneal pathologies.

**Objective:** This study aimed to evaluate the role of MMP-9 in the early detection of KC by investigating its expression levels in patients with KC compared to healthy controls.

**Methods:** A cohort of 60 participants was enrolled, including 30 diagnosed KC patients and 30 age- and sex-matched controls. Tear samples were collected using Schirmer strips and analyzed using enzyme-linked immunosorbent assay (ELISA) to quantify MMP-9 levels. Corneal topography and tomography were performed to confirm KC diagnosis and assess disease severity. Statistical analyses were conducted to compare MMP-9 levels between groups and correlate them with clinical parameters such as corneal thickness and steepness.

**Results:** MMP-9 expression was significantly elevated in KC patients compared to controls ($p < 0.01$). A positive correlation was observed between MMP-9 levels and disease severity indices, including corneal steepness ($R = 0.75$) and reduced corneal thickness ($R = -0.68$). Notably, elevated MMP-9 levels were detected in early-stage KC patients, suggesting its potential role as an early diagnostic biomarker.

**Conclusions:** The findings underscore the utility of MMP-9 as a sensitive biomarker for the early detection and monitoring of KC. Incorporating MMP-9 testing in clinical practice could enhance diagnostic accuracy and facilitate timely intervention, ultimately improving patient outcomes. Further studies are warranted to validate these findings in larger cohorts.

# POSTER PRESENTATIONS

## Transplantology, Anesthesia & Hepatology

### Analysis of the Liver Transplantation Waiting List in Armenia

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***Keywords:*** *liver transplantation, waiting list*

**Background:** Living donor liver transplantation (LDLT) is a crucial treatment for patients with end-stage liver diseases. At Astghik Medical Center, we have a waiting list of 55 patients, comprising 55% males and 45% females, with a median age of 43 years (ranging from 18 to 60).

**Objective:** To analyze the characteristics and challenges associated with the waiting list for liver transplantation at Astghik Medical Center and propose solutions to improve donor availability and patient outcomes.

**Methods:** A retrospective review of the waiting list for liver transplantation was conducted. Data on patient demographics, primary indications for transplantation, and reasons for the lack of suitable living donors were collected and analyzed.

**Results:** The primary indications for LDLT include HBV or HCV-associated cirrhosis (55%), autoimmune cirrhosis (34%), cryptogenic cirrhosis (6%), and other causes such as alcohol-associated cirrhosis and hepatocellular carcinoma (5%). Despite the importance of LDLT, 89% of patients lack suitable living donors due to incompatible blood groups (3%), unwilling potential donors (5%), financial constraints, and critical health conditions. The MELD score of patients ranges from 15 to 30. Child-Pugh classifications are as follows: 21.4% of patients are class A, 61.8% are class B, and 16.8% are class C.

**Conclusions:** Establishing a cadaveric donor liver transplantation program is imperative to address the gap in donor availability and improve outcomes for patients in urgent need of liver transplantation.

### Anesthetic Features During Living Donor Liver Transplantation

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***Keywords:*** *anesthesia, living donor liver transplantation*

**Background:** Since 2019, Astghik Medical Center has performed eight living donor liver transplants (LDLT). Most transplant pairs were first-degree relatives, except for one case where a nephew donated to his uncle. This abstract analyzes our modest experience, aiming to assist others interested in implementing liver transplant programs.

**Objective:** To evaluate and share the anesthetic features and considerations during living donor liver transplantation performed at Astghik Medical Center.

**Methods:** Preoperative investigations, anesthetic assessments, and preparations were conducted following universal standards. Intraoperative monitoring included not only standard methods but also invasive pressure monitoring, central venous pressure, and laboratory parameters such as lactate, microelements, and acid-base balance. Special attention was given to correcting acidosis in the anhepatic phase using approximately 200-300 ml of sodium bicarbonate. The administration of Methylprednisolone or Solu-Medrol to improve kidney function was crucial, and Sandostatin infusion continued throughout surgery and for the first 2-3 postoperative days. Immunosuppression began immediately at the start of surgery, with the first dose of Simulect administered intraoperatively and the second on the fourth postoperative day. Continuous infusion of vasoconstrictors (Norepinephrine) and fast corrections with Mezaton were managed, along with the use of vasodilators (Vazoprostan) and treatment for hypoalbuminemia in the post-hepatic phase.

**Results:** Our comprehensive monitoring and intensive intraoperative management contributed to favorable postoperative outcomes. Effective control of acidosis, early immunosuppression, and rigorous hemodynamic management were key factors in the success of the procedures.

**Conclusions:** The experience at Astghik Medical Center highlights the importance of detailed preoperative preparations, advanced intraoperative monitoring, and intensive postoperative care in successful LDLT. Sharing our insights can provide valuable guidance to other centers looking to establish or enhance their liver transplantation programs.

## Clinical Case of Antiviral Therapy in a Patient with HCV-Associated Liver Cirrhosis and Subsequent Liver Transplantation

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***Keywords:*** *HCV-associated liver cirrhosis, post-transplant complications, antiviral therapy*

**Background:** HCV-associated liver cirrhosis is a leading indication for liver transplantation worldwide. Management of antiviral therapy and post-transplant complications presents significant clinical challenges, particularly in patients with advanced liver disease.

**Objective:** To highlight a complex case of liver transplantation following antiviral therapy in a patient with HCV-associated liver cirrhosis, complicated by episodes of acute-on-chronic liver failure (ACLF) and post-transplant lymphoproliferative disorder (PTLD).

**Methods:** A 54-year-old male with HCV genotype 3 and liver cirrhosis (Child-Pugh B) underwent two courses of antiviral therapy. The first course in 2009 led to ACLF after alcohol consumption, sepsis, and hepatic coma. A second course in 2010 achieved sustained virological response (SVR). Subsequently, the patient underwent TIPS, tumor chemoembolization, and orthotopic liver transplantation in 2012 for decompensated cirrhosis and hepatocellular carcinoma (HCC). Post-transplant complications included biliary stricture, cholestatic syndrome, and EBV-associated PTLD in 2018, managed with reduced immunosuppression and rituximab.

**Results:** The patient achieved SVR post-antiviral therapy and stabilization of transplant function following PTLD treatment. Currently, the patient is stable, with no signs of graft dysfunction or HCV recurrence, despite cessation of immunosuppressive therapy.

**Conclusions:** This case demonstrates the feasibility of liver transplantation after successful antiviral therapy in HCV-associated cirrhosis and highlights challenges in managing ACLF and diverse liver injury profiles post-transplantation. It underscores the need for vigilant monitoring and individualized treatment strategies to optimize outcomes in complex cases.

## Comprehensive Evaluation of Post-Transplantation Complications Following Living Donor Liver Transplantation Using Computed Tomography Imaging and Ultrasound

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***Keywords:*** *living donor liver transplantation, post-transplantation complications, computed tomography, ultrasound*

**Background:** Living donor liver transplantation (LDLT) involves significant risks of post-transplantation complications. Identifying these complications early is crucial for effective management and patient outcomes.

**Objectives:** To evaluate the efficacy of ultrasound (US) and computed tomography (CT) in diagnosing post-transplantation complications following LDLT.

**Methods:** A retrospective analysis was conducted on 12 LDLT patients followed up at Astghik Medical Center since 2019. Eight patients underwent LDLT at our center, and four cases were managed outside of Armenia. During the early postoperative period, US evaluations were performed 2-3 times daily, supplemented by CT imaging in doubtful cases. Parameters assessed included detection of bilomas, vascular patency, fluid accumulations, and tissue changes.

**Results:** Ultrasound effectively detected all bilomas, which were managed with percutaneous drainage under US guidance. Early stages of rejection were identified by US before changes in liver enzymes were noted in laboratory data. CT imaging clarified abscesses and identified hepatic artery thrombosis in one patient. US was shown to be an accessible and cost-effective first-line tool for routine follow-up, while CT provided detailed anatomical assessment in complex cases.

**Conclusions:** Both US and CT are integral in the post-transplantation evaluation following LDLT. US serves as a primary, non-invasive tool for initial and ongoing assessment, while CT offers detailed diagnostic insights necessary for managing complex complications. The complementary use of both modalities ensures comprehensive monitoring and intervention, optimizing patient outcomes in the post-transplantation period.

## Radiology & Advanced Imaging Applications

### Enhanced MRI Diagnosis of Chronic Liver Disease: Evaluating the Role of Liver Specific Contrast Agents in Improved Detection and Characterization

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***Keywords:*** *chronic liver disease, liver specific contrast agents, gadoxetic acid, enhanced mri, focal liver lesions, liver fibrosis, liver cirrhosis, hepatobiliary imaging, non-invasive imaging, 3t mri, signal intensity ratio, fibrosis staging, lesion detection, lesion characterization, sensitivity, specificity, delayed phase imaging, hepatobiliary phase, early diagnosis, liver function assessment*

**Background:** Chronic liver diseases (CLD), including focal liver lesions, fibrosis, and cirrhosis, present significant diagnostic challenges. Early detection is crucial for effective treatment and management. The non-invasive imaging techniques are more preferred to reduce procedural risks. Liver-specific MRI contrast agents, such as gadoxetic acid, improve the detection and characterization of liver abnormalities by enhancing sensitivity and specificity. Use of these agents opens new horizons in assessing liver function, fibrosis staging, and biliary excretion.

**Objective:** To assess the diagnostic efficacy of gadoxetic acid-enhanced MRI in detecting focal liver lesions and evaluating fibrosis and cirrhosis in patients with CLD.

**Methods:** 10 patients (aged 45–69) clinically diagnosed with CLD were studied using 3T MRI. Standardized liver protocol with gadoxetic acid (0.025 mmol/kg) was performed. Imaging sequences included hepatobiliary and delayed phases to enhance lesion detection and fibrosis assessment.

**Results:** Gadoxetic acid-enhanced MRI demonstrated a sensitivity of 91% and a specificity of 86% for detecting focal liver lesions. Signal intensity ratios correlated strongly with advanced fibrosis stages. Compared to standard MRI, contrast-enhanced imaging significantly improved the detection of small lesions (<1 cm) and differentiation between benign and malignant nodules (p< 0.05).

**Conclusions:** Liver-specific contrast agents enhance the reliability of MRI in evaluating chronic liver diseases, reducing the need for biopsies. Given its high sensitivity and specificity, gadoxetic acid-enhanced MRI should be integrated into routine liver assessments to improve early diagnosis and patient outcomes.

### Non-Invasive Imaging of Ulcers and Active Inflammation in Crohn's Disease Using MR Enterography

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***Keywords:*** *crohn's disease, mr enterography, magnetic resonance enterography, ct enterography, inflammatory bowel disease, mucosal ulcers, intestinal inflammation, non-invasive imaging, radiation-free imaging, contrast enhancement, endoscopic correlation, histopathological correlation, fibrosis detection, digestive tract imaging, chronic inflammatory disease, structural abnormalities, disease monitoring, early diagnosis*

**Objective:** Crohn's disease is a chronic inflammatory disease of the digestive tract. Crohn's disease requires precise imaging for diagnosis and monitoring. Magnetic Resonance Enterography (MR-E) has high potential to achieve diagnostic superiority over CT-Enterography (CT-E). MR-E also non-invasive, radiation-free method. This study examines MR-E versus CT- Enterography (CT-E) to detect inflammation, ulcers of the mucous membranes and others structural abnormalities, with emphasis on its clinical utility for improving patient treatment results.

**Methods:** 30 patients (12 male and 18 female, mean age 30) diagnosed with Crohn's disease, who had mild GIT symptoms were selected for this study to make better management strategy. All patients underwent both MR-E and CT-E imaging using standard imaging protocols, including contrast enhancement scans. Imaging results were correlated with endoscopic and histopathological results for validation. The main focus of this study was on detect additional pathological changes, especially ulcers.

**Results:** MR-E detected pathological changes in 23 of the 30 patients, whereas CT-E identified abnormalities in only 14 of these cases. MR-E identified mucosal ulcers in 10 patients, including 6 cases that CT-E missed. Moreover MR-E was more effective in identifying fibrosis in patients with severe inflammation.

**Conclusions:** MR Enterography clearly outperforms CT Enterography in detecting important changes in Crohn's disease, like ulcers, which helps with earlier diagnosis. Its greater sensitivity and accuracy, along with being radiation-free and non-invasive, make it a vital tool for precise diagnosis and better treatment decisions.

## The Diagnostic Value of High-Resolution 3T MRI for Sacroiliac Joint Involvement in Familial Mediterranean Fever

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***Keywords:*** *familial mediterranean fever, sacroiliac joint, sacroiliitis, 3t MRI, high-resolution MRI, autoinflammatory disorder, hereditary disease, armenian population, genetic diagnosis, lower back pain, inflammatory changes, degenerative changes, lumbar spine, dixon sequences, stir sequences, radiological evaluation, disease monitoring, early diagnosis*

**Background:** Familial Mediterranean Fever (FMF) is a hereditary autoinflammatory disorder, which is characterized by recurrent episodes of fever and serositis. Despite being uncommon worldwide, it is frequently observed in people of Armenian heritage. Sacroiliac joint involvement is a relatively underexplored manifestation of FMF, occurring in 5% to 7% percent of FMF patients.

**Objective:** Due to the limited research on sacroiliac joint involvement in FMF, we aimed to develop an accurate diagnostic approach in patients with genetically confirmed FMF. Our aim was to assess the prevalence, severity, and clinical relevance of sacroiliitis in FMF patients, contributing to more effective disease monitoring and management.

**Methods:** A total of 38 FMF patients (18 males, 20 females, aged 15–56, mean age 27) with symptoms indicative of sacroiliitis, (lower back pain and stiffness, etc.), were retrospectively evaluated in this study. Each patient underwent a 3T MRI examination with high-resolution T1 and T2 Dixon/STIR sequences in three planes.

**Results:** All images were independently evaluated by two radiologists. Sacroiliitis was detected in 29 out of 38 patients, with 16 showing mild inflammatory changes, 11 exhibiting moderate alterations, and 5 displaying severe involvement. In most cases MRI findings correlated with specific clinical symptoms. Additionally, in 22 cases degenerative changes in lumbar spine were observed, including six patients without evidence of sacroiliitis.

**Conclusions:** This study underlines the diagnostic value of employing a high-resolution 3T MRI protocol to detect sacroiliac joint involvement in FMF patients, facilitating early diagnosis and effective management. This approach is especially beneficial for patients with mild symptoms and subtle alterations, contributing to an enhancement in their quality of life.

# Allergy, Immunology & Dermatology

## Anaphylaxis after Re-exposure to Ceftriaxone: The Role of Allergy History in Preventing Adverse Drug Reactions

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***Keywords:*** *anaphylaxis, drug hypersensitivity reaction, allergic anamnesis*

**Introduction:** Drug allergies are critical considerations in medical practice, as they can lead to severe, life-threatening reactions. Clarifying a patient's allergy history before prescribing any medication is essential to avoid prescribing drugs that previously triggered allergic responses. We present a case of repeated exposure to an allergen due to an inadequate review of allergic anamnesis.

**Case description:** A 72-year-old female presented with sudden weakness, diffuse rash, pruritus, sore throat, difficulty breathing, and subsequently unconsciousness after ceftriaxone administration, prompting emergency transfer to the hospital. Pre-hospital management included adrenaline and dexamethasone administration, which led to partial improvement. Upon hospital admission, the patient reported persisting weakness, tremors, dyspnea, and burning in the stomach. Blood pressure was 85/40 mm Hg. Ten days prior, a rash and itching had developed after an initial dose of ceftriaxone prescribed by family doctor for left-lobe pneumonia. At that time, ceftriaxone was discontinued, and antihistamines were prescribed, which alleviated the symptoms. However, disregarding prior mild reaction, ceftriaxone was prescribed again, leading to the severe anaphylactic episode described. The patient's skin and mucous membranes were clear, on examination. Auscultation revealed wheezing and a pleural rub in the left lower lung region. Laboratory results were elevated for CRP and glucose levels. Chest CT indicated left-lobular pneumonia and hiatal esophageal hernia. The anamnesis included hypertension, treated episodically with captopril; a history of appendectomy, cholecystectomy, and tonsillectomy. Ceftriaxone was discontinued, and the patient was treated with repeat adrenaline, dexamethasone, and diphenhydramine. She remained under observation until symptoms resolved fully. The drug challenge test was recommended for finding the alternative medication 8 weeks later.

**Conclusions:** This case illustrates the dangers of re-exposing patients to drugs that previously elicited an allergic reaction. This patient's symptoms met the clinical criteria for anaphylaxis, underscoring the importance of thoroughly reviewing and respecting allergy histories before prescribing medications.

## Gone but Not Forgotten: Case Series of Continuous and Recurrent Angioedema Induced by Angiotensin-Converting Enzyme Inhibitors

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***Keywords:*** *angiotensin-converting enzyme inhibitors, angioedema, antihypertensive therapy*

**Introduction:** Angiotensin-converting enzyme (ACE) inhibitors are commonly prescribed for arterial hypertension and heart failure. Although the low incidence (0.1–0.7%) of ACE inhibitors-induced angioedema which is bradykinin-mediated and usually isolated, it poses significant risks due to potential delayed onset. This report describes two cases of recurrent angioedema linked to ACE inhibitor therapy.

**Case descriptions:** The first 52-year-old male patient presented with three episodes of tongue swelling over a four-month period, with the first episode occurring while taking ACE inhibitor Captopril for hypertension. Additionally, the patient had a history of seasonal allergies, and the first episode occurred after consuming honey, although he had never had such complaints before. After identification of Captopril as culprit, it was discontinued; however, the patient experienced two more episodes of angioedema over the next four months. Currently, a year after the last hospitalization, the patient continues avoiding Captopril, but uses other antihypertensives, as well as honey, and he has had no reactions.

The second 64-year-old female patient, also with hypertension, presented with tongue swelling and difficulty swallowing caused by ACE inhibitor Perindopril-containing medication. Her symptoms began hours after taking Amylmetacresol for sore throat while on ongoing antihypertensive therapy with Prestance, containing Amlodipine and Perindopril. The absence of urticaria or itching led to the diagnosis of isolated angioedema caused by Perindopril. After its cessation and initial treatment, the patient was discharged. However, two months later, she was readmitted with severe tongue swelling, leading to intubation and intensive care management after resuming Prestance contrary to medical advice.

**Conclusions:** Both cases illustrate that angioedema can recur even after the discontinuation of ACE inhibitors, particularly in patients with other underlying allergies. ACE inhibitors-induced angioedema necessitates immediate cessation and long-term avoidance of culprit medication.

Vigilant monitoring and patient education are essential to prevent recurrence and ensure patient safety.

## When the Change is Not Helpful: A Case of Recurrent Allergic Contact Dermatitis to Hair Dye and Henna

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***Keywords:*** *allergic contact dermatitis, hair dye, henna, delayed-type hypersensitivity reaction.*

**Introduction:** Allergic Contact Dermatitis (CD) is a delayed-type hypersensitivity reaction. The most prevalent cause of rare hair dye-induced CD is paraphenylenediamine as a hapten. We present a case of multiple reactions to hair dye and henna considered natural.

**Case Description:** A 55-year-old female presented to the allergy clinic with complaints of scalp pain and itching. The symptoms began a day ago, in association with using hair dye. The patient reported three previous incidents with milder symptoms: the first was four months ago after using hair dye, the second - a month later following the use of henna, chosen because of its naturalness, and the third - occurring a month after that, again triggered by hair dye although different. The detailed anamnesis revealed that henna was commercial and composed of paraphenylenediamine.

The patient was treated appropriately in all episodes. She denied any other allergic and accompanying diseases. On examination, the scalp was erythematous and covered with a vesicular rash; mild edema was in the forehead area. The diagnosis of contact dermatitis was made, and the treatment was initiated with a topical corticosteroid, a systemic steroid with tapering the dose, and an antihistamine. In a few days, the patient's condition started to improve, and she was discharged after two weeks with recommendations to avoid hair dye and commercial henna. Four weeks later, the natural henna was patch-tested and recommended to the patient as an alternative to hair dye after negative results.

**Conclusions:** The most significant finding was paraphenylenediamine, which is contained in commercial henna and other hair dyes, although henna is considered natural. This case illustrates how sensitization can intensify with each exposure to the same cause. Besides, the case underscores the importance of recognizing allergens in commonly used products and highlights the role of patient education in preventing recurrent hypersensitivity reactions.

## Oncology, Health Communication & Social Media Insights

### Descriptive and Content Analysis of Breast Cancer Vlogs on YouTube

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***Keywords:*** *breast cancer, social media, YouTube, vlogs, peer to peer support, young patients*

**Background:** Vlogs, or "video blogs," are personally-created experiential videos based on wide-ranging topics, usually posted to YouTube. Many women with breast cancer (BC) document their cancer experiences in YouTube vlogs. These may have the potential to serve as peer-to-peer support and provide community. This study provides a descriptive and content analysis of vlogs by women with BC.

**Methods:** YouTube was searched in incognito mode in 11/2023 using the search terms "breast cancer vlog." A maximum of 10 videos/creator were included based on viewership and date created. Video characteristics collected included: title, length, number of views, likes, comments, and playlist inclusion. Videos were assessed for sponsorship, presence of explanation and discussion on BC, type of content, and themes. Creator characteristics included age, location, and engagement approaches. Descriptive and content analysis were performed to assess and analyze video content and potential areas where peer-to-peer support may be provided.

**Results:** 90 vlogs by 13 creators were included, all originating from personal accounts. Mean video length, number of views, and number of comments were 21.4 minutes (SD 9.1), 266,780 (SD 534,465), and 1485 (SD 3422), respectively. 38.9% included hashtags. 12.2% included paid sponsorships. Most common filming location was at home (96.7%), followed by the hospital (31.1%), or in the car (21.1%). Home vlogs were most often set in the living room (44.3%), bedroom (33.0%), or kitchen (20.6%). 56.7% included visuals of treatment as well as physical findings. Creators addressed motivation for vlogging in 48.9%; the two most common reasons were wanting to build a community and helping others in a similar situation. In 46.7%, creators explicitly expressed emotion. Most common themes were treatment (85.6%), mental health (81.1%), side effects (72.2%), appearance (63.3%), and family relationships (36.7%). Subthemes included young age, finances, and the importance of online community support. Patient-directed advice was offered in 60.0%, mostly on treatment-related issues. In 56.7%, creators provided explicit treatment definitions. Chemotherapy was discussed in 70.0%; surgery in 57.8%, primarily mastectomy; radiation in 30.0%; general side effects in 71.1%. 24.4% were about a new diagnosis. When mentioned (44.4%), most common creator location was the USA. When mentioned (30.0%), most common age demographic was 20-29 years old.

**Conclusions:** Vlogs by women with BC receive significant levels of engagement. The dedication to building community demonstrated by vlog creators, and the personal nature of their storytelling, advice, and suggestions, may make these vlogs a potential resource for peer-to-peer support.

### Voices of Resilience: Analyzing #MetastaticBreastCancer Content on TikTok

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***Keywords:*** *metastatic breast cancer; social media; TikTok; communication*

**Introduction:** Young women with metastatic breast cancer (YWMBC) have unique biopsychosocial challenges, for which they often turn to social media for information and support. TikTok has recently emerged as a platform tailored to younger audiences. The aim of this study is to understand YWMBC engagement on TikTok and analyze contents about MBC.

**Methods:** Videos tagged with #metastaticbreastcancer on TikTok were collected in 07/24. Reviewers gathered video characteristics: username, user profile, caption, length, date posted, number of followers, likes, views, shares, comments, and presence of sponsorship. Creator demographics (age, location, engagement approach) were noted when available. Explanations provided, communication style, themes, and topics discussed were assessed. Descriptive and content analysis were performed. Spearman's correlation coefficient was calculated between variables.

**Results:** 336 English language TikToks were included for analysis. Most videos (41%) were posted in 2024, 97% were from individuals. 1% included sponsorship. Average video length was 1:46 minutes. 161 used music. Mean follower number was 61,927 (SD 350,900). Mean number of views, likes, and comments was 209,882 (SD 625,961), 15,541 (SD 134,070), and 622 (SD 3899), respectively. The majority of videos were filmed at home (56%), specifically in the bedroom. 21% were filmed in a hospital setting. Average age

at diagnosis was 31.4 years old (SD 4.3). Emotion was explicitly present in 24% of videos. Topics discussed included: daily life with MBC (70%), diagnosis (42%), treatment options (38% systemic, 26% surgery and 16% radiation). Specific themes addressed are presented in Table 1. Grief (6%) and end-of-life (2%) were minimally addressed. In 15% of videos, creators specifically asked for support, e.g. prayers, positive thoughts. The most relevant correlations observed for viewer engagement (likes, views) included display of surgical scars, explicit expression of emotions, and diagnosis story. Predictors specific to more comments included fear of recurrence, grief and motherhood. When discussed, common reasons for making videos about their MBC include wishing to provide updates, share their experiences, provide hope to others, and to raise awareness of the Stage IV experience.

Conclusions: TikToks from YWMBC present highly personal narratives of the daily experience of MBC. They are minimally sponsored and generate higher engagement when personal content/emotions are displayed. They may represent a journaling equivalent and could potentially have a beneficial effect on patients.

**Table 1.** Themes Addressed by Videos Tagged with #metastaticbreastcancer on TikTok

| Themes | N (%) |
|---|---|
| General experience of treatment | 175 (52.2) |
| Path to diagnosis | 166 (49.4) |
| Side effects (fatigue, nausea, etc) | 91 (27.1) |
| Motherhood | 69 (20.5) |
| Appearance | 68 (20.2) |
| Mental health | 61 (18.2) |
| Treatment choices | 54 (16.1) |
| Spousal relationship | 49 (14.6) |
| Fear of recurrence | 37 (11.0) |
| Family relationship | 29 (8.6) |
| Grief | 22 (6.5) |
| Fertility | 15 (4.5) |
| Social commentary | 12 (3.6) |
| Treatment toxicity | 12 (3.6) |
| Preparing for end of life | 9 (2.7) |
| Sexuality | 3 (0.9) |

## Why don't they want to wear sunscreen? Quantifying anti-sunscreen messaging on TikTok

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***Keywords:*** *melanoma, skin cancer, TikTok, social media, younger patients, communication*

**Introduction:** The incidence of melanoma among younger patients (YP) is increasing at an alarming rate. YP often turn to social media for information and connection. The emergence of anti-sunscreen messaging on TikTok is concerning. This study aims to quantify the prevalence of anti-sunscreen sentiments on TikTok and analyze their content and communication style.

**Methods:** TikTok videos tagged #nosunscreen were collected in 07/24. Reviewers gathered video characteristics such as username, user profile (individual or organization), date posted, captions, length, number of followers, likes, views, shares, and comments, presence of sponsorship, and filming location. User demographics were noted. Reviewers also noted communication styles and other video characteristics such as the use of audio memes or music. Users' opinions about not wanting to wear sunscreen were collected and analyzed. The associations between variables were assessed with Spearman's correlation coefficient and Chi-squared and Fisher exact test.

**Results:** 321 English language TikToks were selected. The majority (38%) were posted in 2023. Average video length was 25 seconds. Mean number of followers was 90,053 (SD 324,640). Mean number of views, likes, and comments was 73,121 (SD 408,245), 5,250 (SD 31,772), and 50.7 (SD 202.7), respectively. 12 videos included product sponsorship. Female (78%) predominance was observed. Half of creators appeared to be less than 25 years old, and 19% were from visible minorities. 45% of videos used music; 30% used audio memes. 32% were filmed outdoors, mostly in one's backyard or at the beach. In 44% of videos, a sunburn was shown. In half of videos (49%), sunscreen sentiments were clearly described. Common reasons for not wanting to wear sunscreen include personal preferences (16.5%), perceived benefits of natural sun exposure (14%), choosing alternative forms of sun precaution (11%), the desire to tan (11%), and sunscreen being viewed as unnecessary (11%). Believing that sunburns are humorous was associated with having a reason to be anti-sunscreen (p-value=0.024), as well as the verbalized desire to tan (p-value=0.007). TikToks, which conveyed irony/sarcasm (16%), were associated with believing in the benefits of natural sun exposure (p-value=0.002) and with choosing alternative forms of sun precaution (p-value=0.005).

**Conclusions:** TikTok videos tagged with #nosunscreen highlight the alarming prevalence of anti-sunscreen sentiments YP are exposed to. YP may be influenced by humorous videos and by messaging about the perceived benefits of natural sun exposure.

## Pediatrics, Public Health & Nutrition

### Children's Hospital Los Angeles (CHLA) & the Armenian Eye Care Project (AECP): Lessons Learned through 15-Year Partnership

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***Keywords:*** *international collaboration, retinopathy of prematurity, continuing medical education, residency, training*

**Background:** In 2010, CHLA and AECP initiated a collaboration (CHLA Armenia Program) to train pediatric ophthalmologists to treat retinopathy of prematurity (ROP) and train nurses to screen low-birthweight children at risk for ROP. This partnership has since expanded into several impactful programs.

**Objectives:** Through international collaboration, the CHLA Armenia Program seeks to improve children's health in Armenia.

**Methods:** Parallel to the U.S. Centers for Disease Control and Prevention (CDC)'s Strategic Framework for Global Health, the CHLA Armenia Program has focused on improving data and surveillance systems and developing the healthcare workforce and institutions to save lives and improve health. Emphasizing innovation and digital technology, we have fostered a collaboration of global experts to create systemic change by identifying the advantages of non-monetary resources.

**Results:** 1. ROP Screening and Treatment (2010): Over 35,000 screening exams and 1,000+ treatments; no child has gone blind from ROP since 2018; 2. Neonatal Simulation Center (2017): Trained 610 healthcare providers in neonatal resuscitation. Supported by the United States Agency for International Development (USAID); 3. CME (2018) and Learn with OPEN (2020): 90% of Armenian pediatricians engage annually; in 2024, our program provided 128 CME-accredited courses and 11,389 CME credits to Armenian physicians; 4. School-Based Vision Screening (2018): Screened 47,000 children; distributed 1,400 pairs of glasses. Supported by USAID; 5. National Pediatric Residency Program (2023): Two cohorts with 14 residents undergoing training across major pediatric hospitals in partnership with the Health Network of Armenia (HENAR).

**Conclusions:** System-level impact requires commitment to strengthening local partnerships and focusing on the challenges experienced by local stakeholders. The hospital's deep institutional capacity, which allows us to be consistent, competitive, and available to undertake work that would otherwise continue to be neglected, is the source of our commitment to these collaborative efforts. As a result, our focus on and local capacity development of Armenian-based talent enable us to be financial stewards of our grant funding.

### Overweight, Obesity and Nutrition Habits of Armenian Schoolchildren and Adolescents: Time to Act

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**Background:** Unhealthy nutrition habits during adolescence increase the risk of overweight and obesity, diabetes mellitus, cardiovascular disease and mental health problems. Multiple factors contribute to eating behavior of adolescents including eating patterns of family and peers, varieties of available food, social marketing, and societal norms for weight perception.

**Methods:** Health Behavior in School-aged Children Study (HBSC) and Childhood Obesity Surveillance Initiative (COSI) Surveys. Both surveys are conducted under the auspices of the WHO with the standard methodology and questionnaire.

**Results:** According to HBSC, conducted among 11, 13, 15 and 17 years old adolescents, and COSI, conducted among 7-8-year-old schoolchildren Armenian children and adolescents, unhealthy eating habits weremen-tioned. Skipping breakfast is very common for adolescents with high prevalence among 15-years old girls (39%). Consumption of sweets including chocolate every day was reported by 64% of girls and 56% of the boys of 15-years old. Sugary soft drinks consumption daily is higher among 15-years old boys (32%). In comparison with previous study conducted in 2017/18 significant increase in consumption of sweets and sweet beverages was observed. Nutrition habits of 7-8 years old schoolchildren tend to be the same with high level of skipping breakfast. Only 44% of participated children reported eating breakfast every day. About 12% of girls and 25% of boys aged 15 are overweight or obese. COSI Armenia study indicates that 27.7% of surveyed children are overweight and 12.6% are obese.

**Conclusions:** Studies results showed there is a specific need for targeted interventions for schoolchildren and adolescents including promotion of healthy eating habits and physical activities, as well as nutrition education at schools. Restriction of the marketing of unhealthy food and drinks should be taken by government. Prevention and management of overweight and obesity should be implemented by health care providers at schools and primary health care level.

## Surgical Techniques, Wound Care & Orthopedics

### Revision Hip Joint Endoprosthesis Replacement with Custom-Made 3D Printed Titanium Prosthesis

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***Keywords:*** *3D printed prosthesis, hip joint, revision endoprosthesis, bone defect*

Revision hip joint endoprosthesis replacement is one of the most problematic and complex issues of the modern hip joint replacement. The reason: the large amount of primary hip joint replacement surgeries in the last 15 years. 80% of the primary hip joint replacements should be revised because of the expiration of their biological cycles. Revision hip joint endoprosthesis replacement's peculiarities are: 1. Lack of bone structure; 2. Factory-made standard components not being applicable to every clinical case; 3. The high cost and difficult access to the factory-made revision implants.

One of the solutions to the aforementioned problems is implementation of 3D printers. Advantages of 3D printing:

1. Creating custom-made components for the present bone defects;
2. Customizing it to fit the available tools;
3. Financial accessibility.

Due to the aforementioned, 3 surgeries were performed in the traumatology and orthopedic department of Izmirlyan M/C in 2022-2024: 1. 58 years old female, primary hip joint replacement 2002, cemented revision endoprosthesis, 2018; 2. 82 years old male, primary hip joint replacement 2020, a septic destabilization happened, revision endoprosthesis, 2023; 3. 60 years old female, primary hip joint replacement, 2024, revision endoprosthesis, 2024. All of the 3 cases used custom-made 3D printed titanium prosthesis that took 6 weeks to prepare. A major supraacetabular defect was present in all 3 cases. The post-surgery period in the hospital lasted 6-7 days. The leg can bear the full load 8-10 weeks after the surgery. All 3 patients are being closely monitored and don't have any significant post-surgery complaints.

**Summary:** In case of major supraacetabular defects 3D printed prosthesis can be used as the main method of treatment as well as in combination with the other treatment methods.

### The Use of a Vacuum Assisted Closure (VAC) Device in Conjunction with Free and Regional Flaps as an Effective Method for Primary Wound Care in Lover Extremities and for the Reconstruction of Soft Tissue Defect

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***Keywords:*** *wound care, VAC device installation, medial gastrocnemius pedicled flap, TDL free flap*

The global prevalence of lower limb injuries across different anatomic regions and disease categories remains unclear [1]. Compared to other injury types, emergency departments often see a higher incidence of lower extremity fractures. These fractures are associated with high rates of morbidity and mortality [2], frequently accompanied by soft tissue damage or deficits which require diverse treatment options. To address the soft tissue defects in the right leg of a 36-year-old man, as well as fractured tibial and fibular bones, we opted for a medial gastrocnemius muscle rotational flap with VAC therapy. As healing advanced, any remaining defect-free areas were covered using TDL flap intervention. The resolution of the case required implementing surgery to treat the wound based on the mechanism of injury. While performing the surgery, surgical staff discovered that moving the medial pedicle of gastrocnemius muscle and employing a VAC device would satisfactorily mask any damage in an area spanning 25x15cm. Subsequently, after executing seven installation procedures with said device, was resorted to using a TDL flap which promptly sealed off all remaining defects without impediment.

To sum up, the desired result in healing major soft tissue injuries may be attained by utilizing a dual approach of implementing VAC devices and transferring both pedicled and free musculocutaneous flaps.

## Gynecology, Urology & Women's Health

### Diagnostic Value of Microbiological and Molecular Genetic Tests in Management of Women with Bacterial Vaginosis

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***Keywords:*** *bacterial vaginosis, atopobium vaginae, metronidazole, recurrence*

**Background:** Bacterial vaginosis (BV) is one of the most common reasons for abnormal vaginal discharge. It increases the risk of acquiring sexually transmitted infections and associated with other health consequences. Recurrence rate of bacterial vaginosis is very high all over the world. The main causes of recurrence are insufficient diagnostics, standard methods of treatment of BV and empirical therapy.

**Objective:** To evaluate diagnostic value of vaginal culture and PCR tests in management of women with recurrent bacterial vaginosis.

**Methods:** 217 non-pregnant women with history of BV and uncommon odorous vaginal discharge were observed between January 2023 and July 2024. All women were evaluated using Amstel criteria and underwent additional studies: vaginal culture, Femoflor screen REAL-TIME PCR (DNA-Technology) and/or Florocenosis BV (AmpliSens).

**Results:** 115 (53%) women have 1 recurrence episode, 63(29%) - 2 and 39 (18%) - 3 or more episodes during last 12 months. "Clue cells" were revealed in 123 (56,7%) of vaginal smears. Anaerobes in concentrations >103 were observed in 154 (71%) of Femoflor screen tests. Diagnosis of bacterial vaginosis were made using Florocenosis in 136 (62,6%), Gardnerella vaginalis found in 62 (45,6%), Atopobium vaginae in 45 (33%), both Gardnerella+Atopobium – in 29 (21%) women. Bacterial culture revealed Gardnerella in 141 (65%), 38 (27%) of them in concentration 104 CFU. In 69 (67%) of cases Gardnerella was resistant (R) or has intermediate (I) sensitivity to metronidazole (45 (65,2%) - R and 24 (34,8%) - I).

**Conclusions:** To prevent recurrence of BV we recommend to limit the administration of empirical therapy as well as diagnose it based not only on presence of "clue cells" in a native smear but include vaginal culture and Femoflor screen tests in diagnostic routine. The presence of anaerobes >103 copies according to the results of Femoflor screen is an indication for conducting a Florocenosis BV to identify Atopobium vaginae.

### Efficacy of Transobturator Adjustable Slings for Stress Urinary Incontinence: Expanded CaseSeries

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***Keywords:*** *encrusted cystitis, corynebacterium urealyticum, COVID-19, surgical treatment of cystitis, urinary tract infection*

**Introduction:** Stress urinary incontinence (SUI) is a prevalent condition among women, often treated with transobturator midurethral adjustable slings. These slings allow postoperative adjustments to optimize outcomes and reduce voiding dysfunction. This study evaluates the efficacy and safety of adjustable slings in managing SUI and minimizing complications, based on an expanded case series.

**Methods:** A total of 38 female patients with SUI (mean age: 58 years) underwent transobturator midurethral adjustable sling placement over 4 years. All patients had a positive cough test before surgery. Sling adjustments were performed in 5 patients: 4 with persistent positive cough tests and 1 with postvoid residual urine volumes exceeding 30% of the initial volume. Adjustments restored normal continence and resolved voiding dysfunction in all cases. Patients were discharged the day after surgery. Follow-up evaluations were conducted at 24 months post-surgery.

**Results:** During the follow-up period, 2 patients reported recurrent incontinence episodes, but the overall rate remained significantly lower compared to preoperative levels. The use of adjustable slings facilitated correction of postoperative voiding complications, ensuring optimal continence outcomes and reducing dysfunction.

**Conclusions:** Transobturator midurethral adjustable slings effectively treat SUI while allowing adjustments to address postoperative voiding issues. The expanded case series underscores the procedure's safety and efficacy. Further long-term follow-ups are warranted to evaluate sustained outcomes.

## Optimizing Therapy for Women with Endometrial Hyperplastic Processes and Hypothyroidism

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***Keywords:*** *endometrial hyperplasia, endometrial hyperplastic processes, hypothyroidism, levonorgestrel-releasing intrauterine systems*

**Objective:** To determine the optimal drug therapy policy for endometrial hyperplastic processes (EHPs) in women with hypothyroidism.

**Subject and methods:** Examinations were made in 180 women with EHP; in 120 of whom, EHPs were associated with hypothyroidism. The investigators identified 2 groups: 1) 62 women, who underwent only correction of thyroid dysfunction; 2) 58 patients, who received combined therapy for hypothyroidism and EHP. A control group consisted of 60 female patients with EHP without thyroid disease.

**Results:** The efficiency of treatment for EHP was determined to be almost identical in both when prescribing only levothyroxine preparations and when using the latter in combination with gestagens and combined oral contraceptives.

**Conclusions:** Therapy for EHP in patients with hypothyroidism, first of all, should consist of correction of thyroid dysfunction.

# Basic Science, Genetics & Pharmacology

## Bioaccumulation of Macro and Microelements in Endemic Medicinal Plants of Southern Armenia

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***Keywords:*** *bioaccumulation, macro and microelements, endemic medicinal plants, Syunik Region, inductively coupled plasma optical emission spectrometry (ICP-OES)*

**Introduction:** The Syunik region, characterized by its unique mountainous landscape and diverse flora, represents a promising territory for studying the elemental composition of medicinal plants. The region's geochemical features create unique conditions for the accumulation of various elements in plants, determining their potential therapeutic value.

**Objective:** To determine the content of biologically significant macro and microelements (Zn, Se, Fe, K, Mg, Cu, Mn) in 12 endemic medicinal plant species of Armenia's Syunik region: Achillea millefolium L., Thymus kotschyanus Boiss., Hypericum perforatum L., Teucrium polium L., Stachys inflata, Artemisia absinthium L., Nepeta mussinii Spreng, Astragalus karjaginii Boriss, Ziziphora clinopodioides, Origanum vulgare L., Tanacetum argyrophyllum, Helichrysum plicatum.

**Methods:** Plant samples (n=180) were collected during the 2023 vegetation period from 5 different locations in the Syunik region at altitudes of 1800-2400 m above sea level. Samples underwent mechanical cleaning, drying at 60°C, and grinding to 0.5 mm particle size. Elemental analysis was performed using Inductively Coupled Plasma Optical Emission Spectrometry (ICP-OES) on an Agilent 5110 ICP-OES spectrometer (Agilent Technologies, USA) after wet digestion of samples in a Mars 6 microwave digestion system (CEM Corporation, USA). Measurements were conducted in axial and radial plasma viewing modes under the following parameters: plasma power - 1.2 kW, plasma gas flow rate - 12.0 L/min, auxiliary gas flow rate - 1.0 L/min, nebulizer flow rate - 0.7 L/min. Quantitative determination of elements was performed using external calibration with multi-element standard solutions.

**Results:** The study analyzed the content of elements in 43 medicinal plant species, of which 12 are endemic to the region. The concentrations of essential elements were found to vary within the following ranges (mg/kg dry weight): Zn (25.3-68.4), Se (0.15-0.42), Fe (98.2-245.6), K (1580-4350), Mg (890-2340). A significant correlation ($r = 0.82$, $p < 0.05$) was found between the content of these elements in soil and their accumulation in plant tissues.

**Conclusions:** The study revealed significant variability in the macro and micro element content among the studied plant species. The obtained data on the quantitative content of biologically active elements can serve as a scientific basis for developing new phytopreparations based on the endemic flora of the Syunik region.

## Investigating the Role of Mesna in Otologic Surgery: Clinical Utility and Ototoxicity

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***Keywords:*** *Mesna, Cholesteatoma, Tympanosclerosis, Ototoxicity, Middle ear, Chemical dissection, Otology*

**Background:** Mesna (Sodium 2-mercaptoethanesulfonate) has been primarily used in the treatment of cancer to prevent hemorrhagic cystitis and a mucolytic agent in pulmonary diseases. Recent studies have identified its usefulness as a chemical aid in dissection in otologic surgeries such as cholesteatoma, adhesive otitis media, tympanosclerosis. It demonstrates promising results by avoiding damage to sensitive structures in the inner ear.

**Objective:** This review aims to evaluate the effectiveness of mesna in the various uses of otologic surgeries and its potential ototoxicity.

**Methods:** A comprehensive literature search was conducted across eight databases to identify studies involving the use of mesna in ear surgery. Inclusion criteria encompassed both human and animal studies in any language that addressed either efficacy or safety. The review focused on two research questions: (1) What is the effectiveness of mesna in its various otologic applications? (2) Does topical mesna exhibit ototoxic effects?

**Results:** We found 19 studies (10 human, 9 animal) published between 1999 and 2024. Mesna was used for cholesteatoma surgery, the treatment of adhesive otitis media, for myringotomy and for ossicles chain fixation treatment. Studies revealed an improvement in recurrence rates and residual cholesteatoma disease following the application of mesna during surgery. Concentrations from 4% to 100% were used, with no significant signs of ototoxicity in animal models and clinical research.

**Conclusions:** The research indicates that mesna is a promising tool, that could be used effectively and safely in otologic surgery. Further research is needed to determine the optimal concentration of mesna, method of administration, time of contact, and to quantify its effect, particularly in the context of cholesteatoma surgery where the most evidence is available.

## Rare or Undetected? Recent Insights into Rare Mutations of MEFV Gene in Armenian Population

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***Keywords:*** *familial mediterranean fever, MEFV gene, rare mutations*

**Introduction:** Familial mediterranean fever (FMF) is an autosomal recessive autoinflammatory disease characterized by self-limiting attacks of fever and polyserositis, resulting from mutations in the MEFV gene. FMF predominantly observed in Mediterranean populations. The variability in disease severity and clinical manifestations depends on MEFV allelic heterogeneity, modifying genes and environmental factors through epigenetic mechanisms.

Five mutations—V726A, M694V, M694I, M680I, E148Q—account for 74% of typical FMF cases. However, there is no clear data on the frequency and clinical significance of mutations such as P369S, R408Q, E167D, T267I, and R42W among Armenian patients.

**Objective:** This study aims to determine the frequency and functional significance of rare mutations of uncertain clinical relevance in Armenian patients. It emphasizes the need for caution in interpreting genetic test results in patients with atypical presentations, based on the example of a presented clinical case.

**Methods:** We analyzed 446 patients who underwent FMF genetic testing from September 1, 2023, to September 30, 2024, for MEFV mutations using a targeted panel that included 26 mutations across exons 1, 2, 3, and 10 by real time polymerase chain reaction. Symptoms were classified according to Tel HaShomer criteria.

**Results:** Rare genotypes involving one or two alleles were detected in 16 patients (3.6% of all tested patients; 10.2% of those with mutations): four with P369S/R408Q genotype (25%), three P369S/R408Q/E148Q (18.75%), four F479L/E167D (25%), two F479L/E167D/V726A (12.5%), two V726A/M680I/T267I (12.5%), one M694V/R42W (6.25%). Clinical data were available for seven patients. Colchicine was prescribed to one discussed patient with the P369S/R408Q genotype at a dose of 1.5 mg/day, achieving complete clinical and laboratory remission.

**Conclusions:** This study confirms the presence of rare MEFV mutations in Armenian patients with atypical symptoms. The findings underscore the importance of thorough clinical evaluations and careful interpretation of genetic results. Future investigations should focus on comprehensive clinical and laboratory assessments, colchicine efficacy, familial segregation analysis

# Medical Education, Professional Development & Ethics

## A Talk About Talking

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***Keywords:*** *primary care*

Some twenty years ago I was a junior doctor on an orthopedic ward. One day my colleague friend called Jay was asked to come to the reception of the ward to take a phone call. Ward received a call from a GP of a recently discharged patient. This was a little unusual, we did not often have communications like this from GPs, we didn't really know very much about GPs either, we knew they were not very good at operating, that's probably it. So, the call generated some curiosity and a group of us followed Jay to reception. Brief introductions were made, GP wanted to confirm she was speaking to the junior Dr, who had completed patients discharge summary before unleashing her feedback. It was loud enough for all of us to quickly realize GP wasn't happy. "This isn't how you arrange post discharge blood test", - she was shouting, - "you write a request from, give it to the patient, and tell them to make appointment with the practice nurse in so many days/weeks"... finishing with "I don't have any time for this nonsense. Bye" before hanging up. We couldn't understand what happened and why. We found a copy of discharge letter, it simply said "dear GP, one of the liver function tests was slightly deranged post operatively. Kindly keep an eye on it. Thank you for your help" to all of us this seemed like a reasonable and polite way to pass information over to the GP and we dismissed this encounter as "someone was having a bad day " moment. We didn't consider that information in discharge letter didn't advise GP on whether patient had been informed or not? would patient be expecting contact from GP? did they have any questions? Didn't advise about drugs they'd received other than what was in discharge letter, how long was the operation, how recovery was going, no other information that would help GP decide on how to deal with request to "keep an eye" on something slightly out of normal range. Over twenty years that followed I was fortunate enough to participate in or observe countless exchanges between primary and secondary care, some were exemplary for their efficiency and some that could had been done better or used as base for learning.

## Doctor's Portfolio and Training Requirement for UK Specialty Registration

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***Keywords:*** *Portfolio, training, competency, pathways, specialty, UK registration*

The United Kingdom has one of the most well-established postgraduate training programs in the world. It is comprised of three stages:

1. Foundation training (internship), encouraging specialty exploration;
2. Core training (residency), encouraging subspecialty exploration;
3. Higher specialty training (fellow), aiding development in the chosen specialty.

Each stage has minimum standards (competencies) that must be met in order to progress. These are monitored through a portfolio, whose requirements vary depending on the training stage and specialty chosen. The portfolio typically includes supervised learning events, statutory training and projects that trainees are able to undertake. At the end of every training year, members of the training boards address a trainee's portfolio to establish safe and competent clinical practice with the view of maintaining the public's trust in the medical profession. Portfolios provide a good approach in encouraging professional excellence, embedding fairness in clinical development and maintaining professional standards across the nation.

# Nursing, Infection Control & Pain Management

## The elusive headache, three case reports of secondary headaches

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***Keywords:*** *Case series, adult, secondary headache, diagnosis, jaw pain, temporomandibular disorder (TMD), trigeminocervical complex, myofascial, contact point, dental pain, sinus pain*

**Background:** there are over 230 headaches classified within the International Classification of Headache Disorders third edition. It can be challenging at times to diagnose a patient who presents to us with a chief complaint of headache.

**Objective:** I would like to present 3 complex cases of headache conditions presenting to an orofacial pain practice.

**Methods:** I will outline the steps for the assessment of each case; discuss history taking, clinical examination and various tests involved in order to come up with a differential diagnosis.

**Results:** I will describe the case progression and outcome.

**Conclusions:** I will summarize steps involved in the assessment of patients presenting with a chief complaint of headache.

## Evidence-based Nursing in Infection Prevention and Control: Implementation and Monitoring of Guidelines in Peripheral Catheterization

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**Background:** Peripheral catheterization is a common invasive procedure in pediatric healthcare, yet it is often associated with risks of infection. Evidence-Based Nursing (EBN) practices play a crucial role in mitigating these risks by promoting the consistent application of standardized guidelines. Arabkir Medical Center was the first in Armenia to develop and implement comprehensive guidelines for hand hygiene. Since 2009 at Arabkir Medical Center, a comprehensive protocol was implemented to enhance infection prevention and control during peripheral catheterization in pediatric patients. Arabkir MC has pioneered advancements in nursing practices in Armenia by introducing programs in nursing quality control, diagnostics, guideline implementation. By integrating training, auditing, and interdisciplinary collaboration, the center has achieved measurable improvements.

**Objective:** This abstract aims at highlighting the role of EBN in preventing catheter-related infections through the nursing education, application and rigorous control of infection prevention guidelines in a pediatric healthcare setting.

**Methods:** A multi-step approach was adopted, including 1. 2. 3. 4. Development of EBN Guidelines. Guidelines were derived from international standards (WHO) and adapted for local pediatric care settings.

**Staff training:** Nurses had focused training on infection prevention, hand hygiene, and aseptic techniques to peripheral catheterization.

**Implementation monitoring:** Audits were conducted using checklists, and feedback loops were established to address gaps.

**Outcome measurement:** Data on catheter-related infections were collected and analyzed pre- and post-implementation.

**Results:** Following the implementation of EBN-driven guidelines, infection rates associated with peripheral catheterization showed a significant decline. Compliance with hand hygiene and aseptic protocols increased significantly.

**Conclusions:** The application of EBN in infection prevention during peripheral catheterization can substantially reduce infection rates and improve patient outcomes. Arabkir Medical Center's experience underscores the importance of rigorous training, continuous monitoring, and adaptation of guidelines to specific healthcare contexts.

# Internal Medicine, Rheumatology & Neurology (Case-based & Observational)

## Cardiac Manifestations in COVID-19-Associated Multisystem Inflammatory Syndrome in Children (MIS-C)

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***Keywords:*** *COVID19, MISC, cardiac manifestation*

**Background:** Multisystem Inflammatory Syndrome in Children (MIS-C) is a rare but severe complication of SARS-CoV-2 infection, marked by systemic inflammation and multi-organ dysfunction. Cardiac involvement is a significant feature, with manifestations including myocarditis, pericarditis, coronary artery abnormalities, and heart failure, contributing to morbidity and potential long-term sequelae.

**Objective:** To evaluate and characterize cardiac involvement in MIS-C to enhance understanding and optimize management strategies for improved patient outcomes.

**Methods:** A retrospective observational study was conducted at Arabkir Medical Center, analyzing 97 children (aged 0–18 years) diagnosed with MIS-C according to WHO criteria between April 2020 and January 2023. Cardiac assessments included echocardiography, troponin levels, and clinical evaluations.

**Results:** Among the 97 children (median age: 7.5 ± 3 years, male-to-female ratio: 1.5:1), cardiac involvement was observed in 64 cases (66%). Key findings included myocarditis and left ventricular dysfunction (19, 30%), coronary artery abnormalities (13, 20%), and pericarditis or pericardial effusion (17, 26%). Elevated troponin was present in 12 cases (19%), with CRP and ferritin significantly elevated in severe cases. Treatment included IVIG (94%), corticosteroids (61%), and anticoagulants (98%). Inotropic support was required in 11 cases (17%), and 15 patients (23%) were admitted to the ICU. Cardiac dysfunction resolved in 70% of cases by discharge, but 6% had persistent coronary abnormalities at 4 weeks. Mortality was 1%.

**Conclusions:** Cardiac involvement in MIS-C is common and diverse, ranging from mild to severe life-threatening conditions. Early diagnosis and prompt immunomodulatory treatment improve short-term outcomes, while long-term follow-up is essential to monitor and address residual complications effectively.

## Mental disorders in Patients with Rhematoid Arthritis

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***Keywords:*** *rheumatoid arthritis, mental disorders, depression, pain*

**Background:** Pain during rheumatoid arthritis (RA) is a constant stress factor making patients adapt to life conditions due to illness, its treatment, and consequences. Presence of depression increases the pain syndrome, which by itself exacerbates depression forming a vicious circle, whereby resistance toward anti-inflammatory and analgesic therapy develops, so the RA's course and prognosis becomes worse. The said vicious circle leads to cognitive impairments: disorders of memory, logical thinking, and attention.

**Objective:** To examine the presence and degree of depression in RA patients who receive treatment in Armenia, the impact of mental changes in such patients on the disease course and the RA treatment results. The underlying disease's chronic pain often contributes to the depression aggravation building the vicious circle. Search for mechanisms for parallel correction of both pain syndrome and mental disorders is a necessity in the complex RA treatment.

**Methods:** Professional literature review revealed that even many clinical recommendations don't pay due attention to the identification and correction of mental disorders in RA patients. Over the past few years, there were many reasons for chronic stress in Armenia's general population: epidemics, wars, uncertainty about the country's security, etc. Close cooperation with psychiatrists, neurologists, and psychologists in the complex RA treatment is an obvious necessity.

**Results:** Using the simplest and various questionnaires to assess the degree of mental disorders in RA patients revealed that more than 40% suffered from some kind of mental disorder, of which a significant portion was identified after the underlying disease was diagnosed. Moreover, it became clear the RA patients' mental problems weren't only ignored by the patients themselves, but also relegated by their treating physicians.

**Conclusions:** A complete understanding of the relationships between RA and various stress factors will certainly contribute to more effective treatment and prevention of RA, correction of mental disorders and mitigation of social exclusion of RA patients.

## Inflammation is an Additional Risk Factor on the Stroke Development in Patients with Atrial Fibrillation

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***Keywords:*** *AF, stroke development, risk factor, inflammation*

**Introduction:** Various inflammation markers such as interleukin-6 (IL-6) and C-reactive protein (hsCRP) have been linked with AF. Several prothrombotic factors have been found to be elevated in AF, which contributed to an increased risk for stroke. The aim of this study is to evaluate the influence of inflammation and fibrosis on the occurrence of stroke in patients with AF

**Methods:** We followed up 552 patients with nonvalvular AF during 5 years, included a study of complications, physical, laboratory and instrumental examination, also blood tests, such as tissue factor (TF) as a principal initiator of the coagulation cascade, levels of hsCR and IL-6. All of blood tests were determined by ELISA. Treatment regimens carried out standard therapy for all patients. Studies were conducted on the basis of simple randomized open-label protocols, using the universal statistical packages SPSS 13.0.

**Results:** The obtained results showed that among 552 patients with AF within 5 years, heart failure was detected in 289 patients, 123 - had either a cerebral circulation disorders or stroke. There was a significant increase of inflammatory markers (levels of hsCRP and IL-6 and TF in these patients compared with other patients with AF. So, the significant differences between the levels of hsCRP are 8. 6± 2.1 vs 3.9±1.8, p = 0.001; IL-6 is 6.2± 1.4 vs. 2.1± 1.5, p = 0.043 and TF 1350± 68.vs 780±41.1, p = 0.026 accordingly. Moreover, levels of hsCRP and IL-6 were higher among AF patients at "high" risk of stroke by CHA2DS2-VASc (p = 0.003) and with dilated left atrium and poorly functioning left atrial appendage.

**Conclusions:** we have demonstrated that inflammation markers together with coagulation cascade markers, are additional factors contributing to the development of dynamic cerebral circulation disorders or stroke in patients with AF.

# SUPPLEMENT

ARMENIAN MEDICAL WORLD CONGRESS 2025

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