Introduction: Pulmonary embolism (PE), the most serious presentation of venous thromboembolism (VTE), is associated with a high rate of mortality and expense [1-3]. Pregnancy could increases the risk of VTE by four to five times.Globally, PE-related deaths during pregnancy account for 3% of all pregnant deaths. Clinical studies on pregnant women with PE are scarce.
Objectives: The aim of this study was to analyze the clinical impact of genetic polymorphisms and establish a predictive model for pregnant women.
Methods: A total of 53 pregnant women with PE were enrolled between September 2022 and August 2023. Using the propensity score matching method, 106 consecutive pregnant women without VTE were 1:2 matched. We categorized the patients into the model group (n = 120) and the internal validation group (n = 39) in a 3:1 ratio. We collected the basic information, relevant laboratory test results, history of previous illnesses, and other clinical information from both the groups and assessed and followed up on the outcome of the treatment of pregnant women with PE.
Results: Our study showed that 4G/4G homozygous mutations increased the risk of pregnant PE fourfold (OR = 4.46, 95% CI = 1.59-12.50, P = 0.004), whereas the 4G allele mutation increased the risk twofold (OR = 2.33, 95% CI = 1.35-4.04, P = 0.002). Statistically significant differences were observed in the recessive (4G/4G vs. 5G/4G + 5G/5G) and additive (4G/4G vs. 5G/4G vs. 5G/5G) models (OR = 3.76, 95 CI% = 1.53-9.28, P = 0.004 and OR = 2.07, 95% CI = 1.23-3.49, P = 0.006, respectively). We established a nomogram to predict the risk of pregnant women with PE by four predictive features including plasminogen activator inhibitor-1 (PAI-1) genetic polymorphisms, international normalized ratio, antithrombin-III activity, and platelet count. The area under the curve (AUC) of the nomogram was 0.821 (0.744-0.898). The AUC of the internal validation group was 0.822 (0.674-0.971). Decision curve analysis revealed that the nomogram has a higher net benefit in the following threshold: probability interval of ≥ 15%.
Conclusions: The PAI-1 4G/4G genotype is an independent risk factor for pregnant women with PE. And the presence of the 4G allele can increase the risk of PE. Constructing a thrombosis risk prediction model for pregnant women in China is important, and our prediction model could serve as a valuable reference for early intervention strategies.

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Topic: Cardiovascular issues in ICU

000769

Audit investigating the effectiveness of physiotherapy using the Coventry Cardiac Screening Tool (CCST)

RP. Mody[1], D. McWilliams[2], D. Barghouthy[3]
[1]Physiotherapy, Cardiothoracics, University Hospital Coventry & Warwickshire, Leicester, United Kingdom; [2]Centre for Care Excellence, University Hospitals Coventry, Coventry United Kingdom; [3]Critical Care, University Hospitals Coventry & Warwickshire, Coventry, United Kingdom
Correspondence: R.P. Mody
Intensive Care Medicine Experimental 2025 **13**(**Suppl 1**):***769***

Introduction: Guidelines for the Provision of Intensive Care Services (1) recommend a physiotherapist to patient ratio of 1:4 in intensive care units (ICU). With a need to direct limited resources, scores to determine patients most at risk of post-op pulmonary complications are being increasingly used for general surgery populations (2). Formerly, on our cardiothoracic ICU, the surgical postoperative screening tool (SPOST) was utilised to screen all postoperative cardiac patients. Clinically, we have identified that the SPOST may; however, overestimate risk in cardiac surgery patients due to high scores related to anaesthesia duration or high initial prophylactic use of oxygen in the immediate post-operative period. The Coventry Cardiac Screening Tool (CCST) was created based on available evidence to simplify risk prediction by replacing numerical values with a straightforward 'Yes/No' assessment for each factor. A previous project was completed to compare the SPOST and the CCST, demonstrating the CCST resulted in a higher proportion of cardiac surgery to be screened out, without adversely affecting re-referral rates. Collectively, as a team, decision was made to replace the SPOST with the CCST for screening cardiac surgery patients.
Objectives: To evaluate the effectiveness and feasibility of using the CCST to identify high risk patients requiring physiotherapy following cardiac surgery.
Methods: All patients undergoing cardiac surgery between 16th December 2025 and April 2025 were included in the analysis. The CCST was completed by all members of the cardiothoracic physiotherapy team on the first postoperative day following cardiac surgery. Patients identified as low risk received nurse led postoperative mobilisation, with no physiotherapy involvement. Patients who were deemed at high-risk received standard physiotherapy including respiratory interventions and mobilisation. Data was analysed to establish proportion of patients that were screened out, alongside the re-referral rate for those patients deemed to be low risk.
Results: A total of 103 patients were included in the analysis, of which 57 (55%) were deemed low risk and screened out of the physiotherapy service. Of these 14/57 (25%) were re referred for physiotherapy due to respiratory complications such as an increase in oxygen requirements or changes on CXR. Interestingly, of those patients deemed to be low risk only 4/14 (29%) met the department standard of mobilising out of bed on the first postoperative day.
Conclusions: The Coventry Cardiac Screening Tool resulted in just over half of all patients being deemed low risk and screened out of the physiotherapy service. Whilst this helped to free up capacity and physiotherapy service delivery, rates of day 1 mobilisation were low in those patients screened out and around one in four were ultimately re referred for physiotherapy input. Future work will aim to improve nursing staff education to support early mobilisation, as well as reviewing the key components of the tool with an aim to improve identification of high-risk patients.

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Topic: Nursing care and physiotherapy

000770

Efferon LPS NEO hemoadsorption in pediatric sepsis patients: a multicenter controlled study

S. Stepanenko[1], I. Afukov[2], Y. Aleksandrovich[3], E. Zilbert[4], A. Chatchukhina[5], I. Turischev[6], A. Muzurov[6], V. Amcheslavsky[7], A. Nikolishin[8], M. Rusak[9], A. Shavkin[9], A. Popov[10], A. Ustinova[11], I. Bessonov[12], V. Pisarev[13]
[1]Department of surgical resuscitation and intensive care, Filatov Children's City Clinical Hospital of the Moscow Health Department, Moscow, Russia; [2]Pediatric departments, Children's City Clinical Hospital No. 9 named after G.N. Speransky, Moscow, Russia; [3]Department of Anesthesiology, Resuscitation and Emergency Pediatrics, State Pediatric Medical University, Ministry of Health of Russia, Saint-Petersburg,

Russia; [4]Intensive care unit, Filatov Children's City Clinical Hospital of the Moscow Health Department, Moscow, Russia; [5]Intensive care unit, Children's City Clinical Hospital No. 9 named after G.N. Speransky, Moscow, Russia; [6]Intensive care unit, Children's City Clinical Hospital named after St. Vladimir, Moscow, Russia; [7]Intensive care unit, Clinical and Research Institute of Emergency Pediatric Surgery and Traumatology, Moscow, Russia; [8]Intensive care unit, Morozovskaya Children's City Clinical Hospital, Moscow, Russia; [9]Intensive care unit, Children's municipal multi-specialty clinical center of high medical technology, Moscow, Russia; [10]Laboratory of Stereochemistry of Sorption Processes #314, Nesmeyanov A.N Institute of Organoelement Compounds of Russian Academy of Sciences (INEOS RAS), Moscow, Russia; [11]Intensive care unit, Children's City Clinical Hospital No. 5 named after N.F.Filatov, Saint-Petersburg, Russia; [12]Clinical, Efferon International GmbH, Tuttlingen, Germany; [13]Laboratory of molecular mechanisms of critical illness, Federal Research and Clinical Center of Intensive Care Medicine and Rehabilitology, Moscow, Russia
Correspondence: I. Bessonov
Intensive Care Medicine Experimental 2025* 13(Suppl 1):*770

Introduction: Hemoadsorption (HA) is an adjuvant therapy of life-threatening sepsis. Novel HA device, Efferon LPS cartridge containing a porous polymeric adsorbent with surface-immobilized LPS-selective ligand, has demonstrated therapeutic benefits in adult patients with septic shock (SS) [1].
Objectives: To study feasibility of HA using Efferon LPS NEO, pediatric version of the cartridge, in children with sepsis.
Methods: This multicenter study (NCT05707494) compared the clinically relevant effects of HA in pediatric patients with sepsis. A total of 78 children (aged 1-204 months) were included. Of these, 32 received HA (hemoadsorption group, HAG), while 46 received standard of care (control group, CG). Patients in the HAG received two hemoadsorptions using the Efferon LPS NEO cartridge, with a total cumulative treatment duration of 18 h. The primary endpoint was the effect of HA on the pediatric Sequential Organ Failure Assessment (pSOFA) score.
Results: At baseline (day 0), there were no significant differences between the HAG and CG in the following parameters: mean pSOFA score—10.1 (SD 3.5) vs 9.6 (2.8), respectively; incidence of vasopressor use—78% vs 85%; median vasopressor-inotropic score (VIS) among patients in SS—35 (IQR 14-90) vs 36 (15-86); and mean oxygenation index (PF ratio)—242 (SD 144) vs 236 (174) mmHg. The groups also showed no significant differences in pediatric risk of mortality (PRISM) scores, the incidence of acute kidney injury, the use of invasive mechanical ventilation (IMV), or key coagulation parameters. The primary endpoint was achieved: on day 7, the mean pSOFA was 4.9 (SD 4.6) in the HAG and 7.8 (4.2) in the CG, $p = 0.006$. Patients in the HAG discontinued IMV and vasopressor support significantly faster ($p = 0.003$ and $p = 0.001$, respectively); half of the patients were weaned from IMV by day 6 vs day 37, and off vasopressors by day 3 vs day 9 in the CG. In patients with SS, it was accompanied by a marked reduction in vasopressor requirements by day 3: the median VIS was 0.6 (IQR 0-7) in the HAG, compared with 10 (1-65) in the CG, $p = 0.004$. On day 3, the mean PF ratio was significantly higher in the HAG compared with the CG: 314 (SD 144) vs 238 (99), $p = 0.012$. By day 2, patients in the HAG demonstrated a significant reduction in inflammatory markers concentrations: mean serum C-reactive protein decreased from 189 (SD 110) mg/L to 130 (93) mg/L, $p = 0.003$; median interleukin-6 decreased from 700 (IQR 112-4339) to 42 (11-158) pg/mL, $p < 0.001$; and median tumor necrosis factor-alpha decreased from 19 (4.7-66) pg/mL to 6.0 (1.7-17) pg/mL, $p < 0.001$. The 28-day mortality rate was 35% in the control group and 9% in the HA group, OR = 0.2 (95%CI 0.05-0.74), $p = 0.008$.
Conclusions: Efferon LPS NEO decreased severity of multiple organ failure and improved survival in pediatric sepsis. The promising results of this study support the need for adequately powered RCTs to evaluate the potential benefits of HA.

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Topic: Sepsis

000771

The utility of controlling nutritional status (CONUT) score as a preoperative risk assessment in patients with rheumatic heart disease

P.J. Romero[1]
[1]Critical Care Medicine, Philippine Heart Center, Quezon City, Philippines
Correspondence: P.J. Romero
Intensive Care Medicine Experimental 2025* 13(Suppl 1):*771

Introduction: Rheumatic heart disease (RHD) remains a significant burden in developing nations, often leading to complications such as heart failure and malnutrition. The Controlling Nutritional Status (CONUT) score, a screening tool initially developed for hospitalized patients, has garnered attention as a prognostic marker in various medical conditions. Its parameters—serum albumin, total cholesterol, and lymphocyte count—are derived from commonly requested biochemical and immunologic tests. However, its role in predicting outcomes for patients undergoing surgery for RHD remains unclear. This retrospective cohort study aimed to assess whether the preoperative CONUT score could serve as a risk assessment tool in this population.
Methods: A total of 93 adult patients who underwent valve surgery for rheumatic heart disease were included in this retrospective cohort study. Medical records from the Philippine Heart Center, spanning January 2022 to January 2024, were reviewed. Patients were selected through purposive sampling, with inclusion based on the availability of complete preoperative laboratory results required to compute the CONUT score. Postoperative outcomes, including mortality and complications, were also collected.
Results: The study found that patients who experienced clinical outcomes were significantly older than those who did not, but there were no notable differences in gender, BMI, valve involvement, comorbidities, or laboratory values between the two groups. The mean CONUT score was 3, indicating mild nutritional risk for most patients, but it did not significantly predict clinical outcomes such as prolonged hospital stay, bleeding, or infections. Although four patients died and one experienced a stroke, these outcomes were excluded from the odds ratio analysis due to statistical limitations. Overall, the CONUT score was not a significant determinant of adverse outcomes in this cohort.
Conclusions: Although the CONUT score has demonstrated prognostic value in other medical conditions, its utility in predicting outcomes for RHD surgery was not validated in this study. Other validated screening tools for nutritional assessment may be more suitable in this population. Prompt surgical intervention remains crucial in managing RHD, especially given the association between age and adverse outcomes. However, this study's limitations, including its retrospective design and small sample size, warrant further prospective validation studies in larger patient cohorts to elucidate the role of nutritional assessment in RHD management.

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Topic: Metabolism, endocrinology, liver failure and nutrition

Traumatic brain injury at King's College Hospital Critical Care Centre (2022–2023)

L. Colorado[1], T. Lalmahomed[2], J. Fideles[2], M. Tanaka[3]
[1]Critical Care, King's College Hospital NHS Trust, London, United Kingdom; [2]King's critical care, King's College Hospital, London, United Kingdom; [3]Critical Care, King's College Hospital, London, United Kingdom
Correspondence: L. Colorado
Intensive Care Medicine Experimental 2025* 13(Suppl 1):*772