OP-079 PREDICTION OF MORTALITY USING OXYGEN SATURATION (SPO2) IN PEDIATRIC INTENSIVE CARE SCORES: VALIDATION OF SPO2 MODIFIED PRISM-III SCORE

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Aim To investigate the validation and discrimination of modified PRISM-III score using oxygen saturation (SpO2) in pediatric intensive care unit (PICU) admissions.

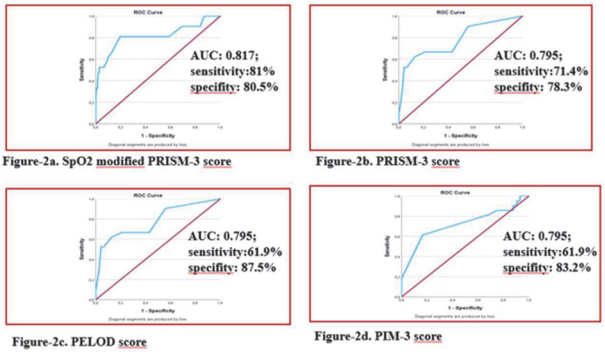
Material and Method A prospective observational study was conducted in PICU admissions between 1 month and 18 years at University of Health Sciences Antalya Training and Research Hospital between May-2021 and Aug-2022. Patient demographics, clinical variables within 48 hours and intensive care scores (PRISM-III, PIM-III, PELOD scores) were recorded. A modified PRISM-III score was developed by replacing SpO2 to PaO2 measurements. Group categorization was based on survival. SPSS-21 program was used for statistical analysis using Chi-square test for categorical variables and Mann-Whitney U test for continuous variables. ROC analysis calculated the cut-off value of the modified PRISM-III score to determine mortality. Kaplan Meier survival analysis determined the probability for survival, Cox regression model calculated the odds ratio for survival

Results Total of 380 patients were included (figure 1: age distribution). Common cause for PICU-admission was acute respiratory distress (47%). Mortality rate was 5.5%. The lowest SpO2 value measured within 24 hours was 90.3% (91.2% in survivors, 75.4% in the non-survivors group; $p<0.05$). PRISM-III, PIM-III, and PELOD scores were higher in the non-survivors group ($p<0.05$, $p<0.05$, $p<0.05$). The area under the curve for the modified PRISM-III score was 0.817 in ROC curve analysis, indicating that the discrimination was stronger than other mortality scores (figure 2). Kaplan-Meier and Cox regression analysis demonstrated a compatible outcome for SpO2-modified PRISM-III score on survival. As the modified PRISM-III score increased by one unit, the risk of mortality increased by 1.115 times (table 1).

Conclusions A novel SpO2-embedded mortality scoring model (SpO2-modified PRISM-III score) showed good predictive capability to determine mortality. A one-unit increase in the modified PRISM-III score causes a 1.115-fold increase in mortality. Comprehensive studies with larger patient populations are needed to develop easy-to-perform mortality scores in children.

Abstract OP-079 Table 1 Cox regression analysis for modifiye PRISM-III Score

	B	Standard Error	Wald	Standard deviation	p	Odds Ratio	95% CI Lower limit	95% CI Upper limit
Modified PRISM-III Score	0,109	0,019	31,581	1	0,000	1,115	1,074	1,158



Abstract OP-079 Figure 1 ROC analysis of intensive care scores.

OP-080 INFECTIOUS ACUTE RESPIRATORY FAILURE IN PATIENTS UNDER FIVE YEARS OF AGE

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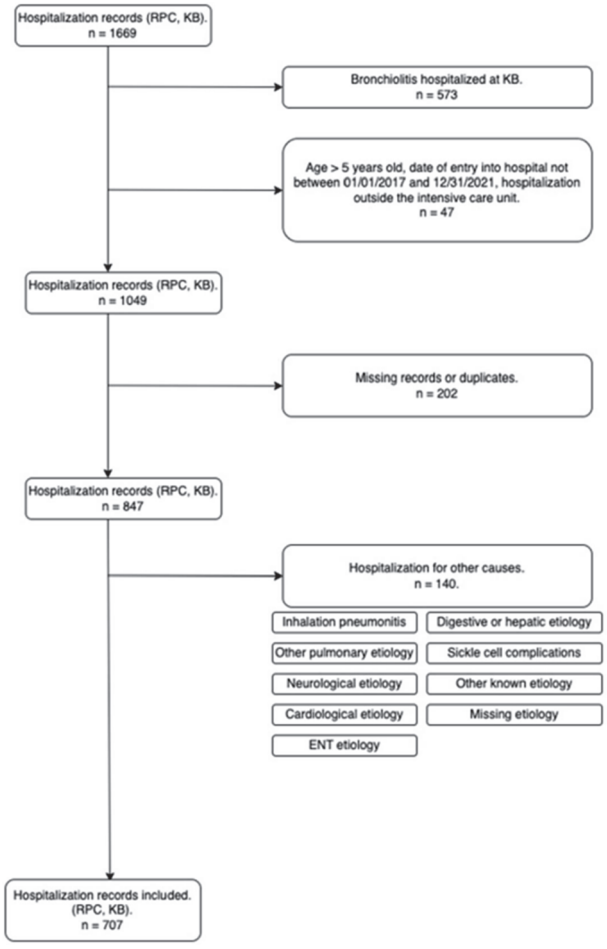
Aim Acute lower respiratory infections in children under five years old present a real challenge for diagnosis and treatment and a leading cause of mortality. The study aimed to describe this population at admission to the pediatric



Abstract OP-080 Figure 1 Flow chart.

intensive care unit and during hospitalization to better identify their needs. Secondary outcomes consisted of comparing patients aged less and more than six months, and the presence or absence of an alveolar condensation on chest X-ray or lung ultrasound.

Material and Method We conducted a retrospective, multicenter study in two pediatric intensive care units in the Ile-de-France region. We included children under five years of age hospitalized between January 1st,2017, and December 31st, 2021 for a respiratory infection complicated by acute respiratory failure (figure 1).

Results We included 707 patients. The mean age was 9 months. On arrival, patients were oxygen-dependent with a mean FiO2 of 34%, and 63% required non-invasive ventilation (NIV). During hospitalization, more than 70% required ventilatory support by NIV, and 10% tracheal intubation. 18% required volemic expansion, and 4% vasopressors. Nearly 90% of PCRs for respiratory viruses were positive, and in almost two-thirds of cases, RSV was found. S.pneumoniae, M. catarrhalis, and H.influenzae were frequently found. Significantly, patients aged less than six months needed NIV more, had less alveolar condensation, had slightly lower oxygen requirements, a less frank inflammatory syndrome, a more frequently positive PCR for respiratory viruses, were less frequently treated with antibiotics, but when they were, required a longer duration of treatment.

Conclusions We showed similarities between patients hospitalized for lower respiratory infection in pediatric intensive care units in France and those in Australia or Brazil. Optimal management relies mainly on NIV, oxygen therapy with FiO2 under 40%, and available antibiotics. These results lead us to believe that the implementation of NIV training and equipment could help reduce mortality from lower respiratory infections in children worldwide.

OP-081 INTERVENTION STUDIES ON FAMILY CENTERED CARE IN NICUS: SCOPING REVIEWS

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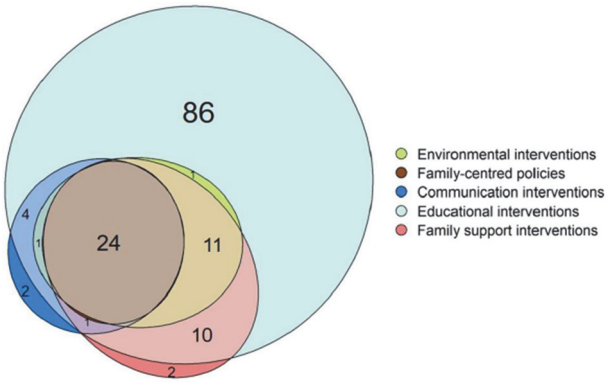
Aim Many family-centred care (FCC) interventions have been studied in the in the setting of neonatal intensive units (NICUs), but a systematic review analysing characteristics of existing intervention studies was lacking. We analysed characteristics of randomised controlled trials (RCTs) on FCC interventions in NICUs.

Material and Method We searched PubMed, EMBASE, Web of Science and the Cochrane library up to January 31, 2022, reference lists of included studies and reviews. Interventions were grouped in five categories: family support; educational; communication; environmental; policies. Subgroup analyses by time-period and country income were conducted.



Abstract OP-081 Figure 1 Number of RCTs testing each category of FCC interventions (N=146).

Results Out of 6583 retrieved studies, 146 RCTs were identified, with 53 (36.3%) RCTs published after 2016. Overall, 118 (80.8%) RCTs were conducted in high-income countries, 26 (17.8%) in middle-income countries, none in low-income countries. Only 2 RCTs were multi-country. 92 RCTs (63.0%) measured outcomes in children, 90 RCTs (61.6%) in parents, 32 RCTs (21.9%) in fathers, 1 RCTs in health professionals. The role of health professional, both in delivering and in receiving the interventions (e.g. training), was unclear in 65 (44.5%) RCTs. A large variety of intervention combinations was tested, with 52 (35.6%) RCTs testing more than one category of interventions, 24 (16.4%) RCTs including all five categories. A total of 77 different interventions/intervention packages were tested, reporting on 359 outcomes, with a lack of head-to-head studies comparing the same interventions. We developed menus of interventions and of related measuring methods, grouped in categories (by target population and outcomes type).

When interventions were classified into the five categories of FCC, a large variety of interventions and intervention combinations was observed. Notes: in addition to the RCTs shown in the figure, 2 RCTs (1.4%) tested environmental interventions as single interventions and 2 RCTs (1.4%) tested family-centred policies as single category interventions. Abbreviations: RCT=randomized controlled trial; FCC=family-centred care (figure 1).

Conclusions There is a large and raising number of RCTs on FCC interventions in NICUs, and specific research gaps. The large variety of FCC interventions, their high complexity, the need to tailor them to context, and major gaps in implementation, suggest that implementation research is the current priority. The menus developed may favour both further research and implementation.

OP-082 PLASMA EXCHANGE IMPACT ON CYTOKINES

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Aim Therapeutic plasma exchange (TPE) is a life-saving method when performed for appropriate indications. The aim of this study was to investigate the effect of therapeutic plasma exchange on tumor necrosis factor-like weak inducer of apoptosis (TWEAK) protein and interleukin-6 (IL-6) levels