PACULit

MAY NEWSLETTER

STUDY 1: THE IMPACT OF THE 2024 INTRAVENOUS FLUID SHORTAGE ON EMERGENCY DEPARTMENT LENGTH OF STAY AND 72-HOUR RETURN RATE

Authors: Stenson BA, Shaw DL, MacDougall G, Kolikof J, Gaudet C, Grossestreuer A, Sanchez LD, Chiu DT
Background: An abrupt nationwide IV fluid shortage in 2024 led to rationing protocols in emergency departments (EDs).
Study Objective: Evaluate the impact of IV fluid rationing on ED metrics.
Study Design: Retrospective cohort study comparing pre- and post-shortage periods.
Intervention: IV fluid rationing implemented post-shortage.
Results:

- Reduced IV Fluid Utilization: Decreased from 24% pre-shortage to 20% post-shortage.
- Shorter ED Length of Stay: Median ED LOS decreased from 7.8 hours to 7.1 hours ($p < 0.001$) for discharged patients with gastrointestinal symptoms.
- No Significant Change in 72-Hour Return Rates: No difference observed in the 72-hour return rate ($p = 0.156$).

STUDY 2: NIRSEVIMAB PROPHYLAXIS ON PEDIATRIC INTENSIVE CARE HOSPITALIZATION FOR SEVERE ACUTE BRONCHIOLITIS

Authors: Sarah Touati, Alexandre Debs, Luc Morin, Laure Jule, Caroline Claude, Pierre Tissieres
Background: Severe acute bronchiolitis is a leading cause of PICU admissions. Nirsevimab is an anti-RSV monoclonal antibody.
Study Objective: Assess the impact of Nirsevimab prophylaxis on PICU admissions and costs.
Study Design: Retrospective cohort study over six winter seasons.
Intervention: Universal neonatal Nirsevimab prophylaxis (2023-2024).
Results:

- 9.1% Reduction in PICU Admissions: Admission rate decreased from 17.6% to 8.5% ($p < 0.001$).
- 25% Reduction in PICU Length of Stay: Decreased from 4.4 days to 3.3 days ($p = 0.02$).
- Cost Savings: Annual cost reduced by €89,061 without altering cost-effectiveness ratios.

Subscribe to
PACULit Newsletter
for up-to-date information

Watch the full video on **YouTube**:

STUDY 3: RESCUE KETAMINE FOR PREHOSPITAL STATUS EPILEPTICUS

Authors: Leah Lawrence
Background: Ketamine is used as a rescue therapy for benzodiazepine-resistant status epilepticus.
Study Objective: Evaluate ketamine's effectiveness as a rescue intervention for prehospital SE.
Study Design: Seven-year observational cohort of adults treated for SE after midazolam failure.
Intervention: 100 mg ketamine administered after midazolam failure.
Results:

- Rapid seizure termination in 98.2% of patients following 100 mg ketamine administration.
- No recurrence during prehospital care and only one recurrence after hospital transfer.

STUDY 4: PROTHROMBIN COMPLEX CONCENTRATE (PCC) IN MILD TRAUMATIC BRAIN INJURY

Authors: Douillet, Delphine; Tazarourte, Karim; Dehours, Emilie; Brice, Christian; et al.
Background: Rapid VKA reversal is crucial for TBI patients to prevent ICH.
Study Objective: Compare immediate PCC vs. CT-guided reversal in TBI patients.
Study Design: Randomized controlled trial across 21 French EDs.
Intervention: Immediate 25 IU/kg PCC versus CT-guided reversal.
Results: Non-Significant Reduction in ICH Rates: 6.1% ICH in the PCC group vs. 12.1% in the control group (OR 0.47, 95% CI 0.14–1.44; P = 0.215).

STUDY 5: HEMODYNAMIC EFFECTS OF ADJUNCT ARGININE VASOPRESSIN IN SEPTIC SHOCK

Authors: Douillet, Delphine; Tazarourte, Karim; Dehours, Emilie; Brice, Christian; et al.
Background: Identifying factors predicting AVP response can optimize septic shock management.
Study Objective: Determine factors predicting AVP responsiveness in septic shock.
Study Design: Multicenter observational registry study across 11 ICUs.
Intervention: Adjunctive AVP with norepinephrine for septic shock.
Results:

- Hemodynamic Response: 79% of patients responded to AVP, with obesity and higher lactate levels decreasing response, while a higher norepinephrine dose (≥0.30 µg/kg/min) improved response.
- Shock Duration: Prolonged with higher BMI, increased norepinephrine dose, and longer norepinephrine use; higher pH reduced duration.
- Rebound Hypotension: Occurred in 9% of patients after AVP cessation, but using AVP for over 24 hours significantly lowered this risk.