CASES that Changed the Trajectory:

3 ICU Stories You'll Never Forget

This case series presents real-world ICU experiences from India, demonstrating how **early recognition, protocol adherence, and physiology-driven critical care** can significantly influence outcomes in high-acuity patients. Each case highlights a decisive intervention aligned with existing critical care guidelines.

CASE 1

Septic Shock with Delayed Presentation

Impact of Early Vasopressor Use and Lactate-Guided Resuscitation

Clinical Profile

A middle-aged Indian male with diabetes mellitus and hypertension presented with fever, altered sensorium, and refractory hypotension following delayed referral. On ICU admission, vital parameters were BP 82/48 mmHg (MAP 59 mmHg), HR 122/min, RR 30/min, SpO_2 88% on high-flow oxygen, and temperature 39.2°C. Laboratory evaluation revealed arterial lactate 4.6 mmol/L, serum creatinine 2.1 mg/dL, and urine output <0.3 mL/kg/hr.

Management Strategy

A structured sepsis bundle was initiated immediately. Broad-spectrum antimicrobials were administered within the first hour. Early norepinephrine infusion was started to maintain MAP ≥65 mmHg, limiting excessive crystalloid exposure. Resuscitation followed evidence-based sepsis guidelines, incorporating lactate clearance as a therapeutic target and lung-protective ventilation (tidal volume 6 mL/kg predicted body weight).

Advanced hemodynamic monitoring was used to assess fluid responsiveness and guide titration of fluids and vasopressors.

Clinical Course and Outcome

Within 24 hours, MAP stabilized above 70 mmHg, lactate declined to 1.8 mmol/L, and urine output improved to >0.7 mL/kg/hr. Vasopressors were successfully tapered over 48 hours. Renal function stabilized without need for renal replacement therapy. The patient was extubated on day four and discharged from the ICU on day six with intact neurological function.

Clinical Insight

This case demonstrates that even in delayed presentations, **early vasopressor initiation, avoidance of fluid overload, and lactate-guided resuscitation** can reverse septic shock and prevent organ progression.

CASE 2

Severe ARDS Secondary to Pneumonia

Early Prone Positioning as a Determinant of Oxygenation Response

Clinical Profile

A 38-year-old woman was admitted with rapidly progressive hypoxemic respiratory failure due to severe pneumonia. On ICU admission, RR was 34/min, HR 118/min, SpO_2 84% on non-invasive ventilation, and BP 110/68 mmHg. Arterial blood gas showed a PaO_2/FiO_2 ratio of 90. Chest imaging revealed bilateral diffuse infiltrates, consistent with severe ARDS.

Management Strategy

The patient was intubated and managed with lung-protective ventilation (tidal volume 6 mL/kg predicted body weight, plateau pressure 28 cmH_2O, PEEP 12 cmH_2O). Given refractory hypoxemia despite ventilatory optimization, prone positioning was initiated within 12 hours of intubation, following a standardized proning protocol.

During prone ventilation, oxygenation improved (PaO_2/FiO_2 160), FiO_2 requirements decreased, and hemodynamics remained stable. Short-term neuromuscular blockade was used to optimize ventilator synchrony.

Clinical Course and Outcome

Over the next 72 hours, progressive improvement in oxygenation and respiratory system compliance allowed gradual de-escalation of ventilatory support. The patient was extubated on day seven and discharged from the ICU without the need for supplemental oxygen.

Clinical Insight

This case reinforces the importance of **early, protocolized prone positioning** in severe ARDS to improve oxygenation and facilitate lung recovery.

CASE 3

Sepsis-Associated Acute Kidney Injury

Hemodynamic Optimization to Avoid Renal Replacement Therapy

Clinical Profile

A 62-year-old hypertensive male presented with urosepsis, hypotension, and oliguria following delayed referral. Initial vitals included BP 90/54 mmHg (MAP 66 mmHg), HR 110/min, temperature 38.7°C, and urine output <200 mL over 12 hours. Laboratory findings showed serum creatinine 3.2 mg/dL (baseline ~1.1 mg/dL), blood urea nitrogen 68 mg/dL, and metabolic acidosis (pH 7.28).

Management Strategy

Early renal-protective measures were implemented in parallel with sepsis management. Vasopressors were titrated to maintain MAP ≥70 mmHg. Fluid therapy was individualized using dynamic indices of fluid responsiveness. Nephrotoxic agents were avoided, antimicrobial doses were adjusted to renal function, and strict input–output monitoring was enforced.

Clinical Course and Outcome

Within 48 hours, urine output improved to >0.6 mL/kg/hr. Metabolic acidosis resolved, and serum creatinine stabilized before declining to 2.1 mg/dL. Renal replacement therapy was not required. The patient was transitioned out of ICU care on day five with recovering renal function.

Clinical Insight

This case highlights how early hemodynamic optimization and renal-focused critical care can halt progression of sepsis-associated AKI and obviate the need for dialysis.

Early activation of guideline-based bundles, judicious use of vasopressors, lung-protective strategies, and renal-preserving hemodynamics can significantly alter disease trajectories—even in late-referred patients.

These cases reinforce that optimal ICU outcomes arise from **integrated, evidence-based critical care delivered without delay.**

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*The cases presented are hypothetical in nature and intended for illustrative purposes only. The management strategies discussed are evidence-based and aligned with established clinical guidelines and scientific literature.

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