

Intermittent use of cytokine adsorption in combination with CRRT in a patient with necrotising pancreatitis, septic shock and MOF

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This case study reports on a 60-year-old female patient with septic shock and MOF after cholecystectomy which was complicated by massive aspiration and necrotizing pancreatitis. On admission to ITU, the patient was in respiratory and acute renal failure and exhibited high needs for vasopressors and fluids. Lung-protective ventilation and hemodynamic stabilization, antibiotic therapy and CRRT plus Cytosorb were started in the further course. During the first 48 h of hemoadsorption, norepinephrine requirements decreased markedly. During the second use of CytoSorb norepinephrine infusion could be stopped after 40 h. CRRT was stopped 11 days after the second CytoSorb treatment and two days later the patient was successfully weaned from ventilation. The authors conclude that they could successfully use intermittent cytokine hemoadsorption to manage a patient with recurrent septic shock, necrotising pancreatitis and MOF. Supplementing the standard treatment for sepsis with two applications of hemoadsorption facilitated rapid hemodynamic stabilization. Cytosorb was easy to use and no adverse effects were observed.

Case presentation

- A 60-year-old female patient with septic shock and MOF post-cholecystectomy complicated by massive aspiration during emergency gastroscopy and necrotising pancreatitis requiring necrosectomy
- On admission to ITU, the patient was in respiratory and acute renal failure with high needs for vasopressors and fluids
- Following initial stabilization, colonic perforation and renewed septic shock occurred on day 13 post-operation, necessitating colectomy and further necrosectomy on day 14
- Lung-protective ventilation and hemodynamic stabilization using nuanced fluid and norepinephrine therapy with advanced hemodynamic monitoring
- Antibiotic therapy was initiated with meropenem and linezolid administered in dosages adopted to CRRT
- CRRT (CiCa-CVVHD) was started on day 2 post- operation and combined with CytoSorb

Treatment

- 1st CytoSorb treatment beginning on the second post-operative day for 48 hours
- 2nd CytoSorb treatment from day 13 post-operation for 96 hours

Measurements

- Need for norepinephrine

Results

- During the first treatment, norepinephrine requirement decreased from 0.13 to 0.00 µg/kg/min
- During the second treatment the initial norepinephrine need was 0.13 µg/kg/min which rose to a maximum of 0.43 µg/kg/min 12 h post-operatively
- However, the infusion could be stopped after 40 h

Patient Follow-Up

- The general condition of the patient improved dramatically despite further multiple operations for intra-abdominal bleeds, necrosis and wound healing impairment
- CRRT was stopped 11 days after the second treatment
- Two days later the patient was successfully weaned from ventilation

CONCLUSIONS

- Intermittent cytokine hemoadsorption could be successfully used to manage a patient with recurrent septic shock, necrotizing pancreatitis and MOF
- Supplementing the standard treatment for sepsis with two applications of hemoadsorption facilitated rapid hemodynamic stabilization
- Cytosorb was easy to use and showed no adverse effects