pneumoniae/oxitoca in both patients). *Aspergillus fumigatus* DNA was detected in two patients. Six out of 50 samples (12%) were positive by both SeptiFast assay and culture. Additional SeptiFast-positive results (negative by cultivation) were obtained in nine of 50 patients (18%). Four out of 50 samples (12%) tested negative by the SeptiFast assay but were positive by culture. Those results were interpreted as false negative molecular testing. The remaining 31 samples tested negative by both SeptiFast assay and culture. In the group of 10 haematological patients, SeptiFast results were positive for six of the 10 patients (60%), whereas blood cultures were positive in only two out of 10 patients (20%).

Conclusion We conclude that the SeptiFast assay is a clinically valuable add-on to conventional culture methods for rapid aetiological diagnosis of sepsis in patients where the empirical antimicrobial therapy has already been started and pretreatment blood cultures were negative.

P9

Eosinophilia as a marker of adrenal insufficiency in critically ill patients with severe septic shock: 1-year prospective study

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Critical Care 2008, **12(Suppl 5):**P9 (doi: 10.1186/cc7042)

Background Adequate adrenocortical function is essential to survive critical illness. The number of circulating eosinophils has been proposed as a marker of adrenocortical function. The goal of the present study was to determine whether eosinophilia could serve as a useful and early marker of adrenal insufficiency in critically ill patients with severe septic shock.

Methods During a 1-year period, we studied prospectively all 294 patients admitted to our ICU. Sixteen patients (13 male/three female, 5.4% of admissions) with eosinophilia defined as more than 3% of the white blood cell count and severe septic shock, refractory to fluid and vasopressor resuscitation, were included. A high-dose (250 μg, intravenously) corticotropin stimulation test was performed in all included patients.

Results The mean age was 47.2 ± 18.7 years, the Acute Physiology and Chronic Health Evaluation II score on admission day was 18.6 ± 6.8 and the Sepsis-related Organ Failure Assessment score was 10.3 ± 2.7 on eosinophilia day. The mean eosinophil count was 6.9 ± 3.5% of white blood cells. Eosinophilia was present 1.9 ± 0.9 days (range 8 hours to 4 days) before the onset of septic shock. Multidrug-resistant Gram-negative bacteria in 14 patients, Gram-positive in three patients and fungi in two patients were isolated and considered responsible for sepsis. Baseline cortisol levels were 19.4 ± 8.1 μg/dl and the adrenal response to the corticotropin stimulation test was 8.3 ± 4.9 μg/dl above baseline. Eleven out of 16 patients failed to respond to the corticotropin stimulation test above the critical level of a 9 μg/dl rise, and two out of 16 patients had baseline cortisol concentration <10 μg/dl. A hydrocortisone infusion (300 mg/day) treatment resulted in haemodynamic improvement in 12 out of 16 patients (75%). The 28-day mortality (following the onset of septic shock) was 43.7%. The only independent predictor of death was age ($P = 0.027$).

Conclusion Relative eosinophilia may be considered a useful and early bioassay for adrenocortical function assessment in critically ill patients with severe septic shock and assumed adrenocortical depression.

P10

Polymerase chain reaction detection of sepsis-inducing pathogens in blood using SepsiTest™

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Critical Care 2008, **12(Suppl 5):**P10 (doi: 10.1186/cc7043)

Background PCR enables the identification of bacterial DNA in culture-negative samples from patients with suspected infection, allowing the confirmation of, for example, meningitis and septic arthritis. Gross discrepancies in the incidence of positive results between culturing and PCR have been reported, the latter corresponding better to bacterial loads observed by immunofluorescence microscopy and inflammatory response measurements. The goals of PCR assaying of clinical samples for pathogens are improved disease surveillance, early guidance on appropriate antibiotic therapy and patient management.

Methods SepsiTest™ is a new PCR test for the presence of bacterial and yeast pathogens in whole blood samples. The test combines sample preparation, the directed extraction of pure pathogen DNA from 1 ml blood, with PCR assays for the universal detection of bacteria and yeasts based on the amplification and monitoring of 16S and 18S rDNA sequences, respectively. Blood from septic patients was extracted and analysed, using SepsiTest™ together with sequencing of amplicons from positive samples and online BLASTN analysis for the identification of pathogens.

Results The test was validated by the determination of the limits of detecting pathogens in blood (spiking experiments, >95% sensitivity, $n = 6$), including (colony-forming units/ml) *Staphylococcus epidermidis* (20), *Staphylococcus aureus* (40), *Streptococcus pneumoniae* (40), *Escherichia faecalis* (120), *Escherichia coli* (150), *Klebsiella pneumoniae* (110), *Enterobacter aerogenes* (210), *Pseudomonas aeruginosa* (460) and *Candida albicans* (400). In total, samples from 55 patients with systemic inflammatory response syndrome criteria were analysed in an ongoing study. Compared with blood culturing, the preliminary data showed a diagnostic sensitivity of 60%, specificity of 98%, negative predictive value of 91% and positive predictive value of 86%.

Conclusion The data are discussed with respect to the significance of the molecular test for the diagnosis of sepsis. Special emphasis is put on the clinical data available supporting the finding of PCR-positive but culture-negative results.

P11

Impact of an educational program on the Surviving Sepsis Campaign implementation for sepsis management

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Critical Care 2008, **12(Suppl 5):**P11 (doi: 10.1186/cc7044)

Background Severe sepsis and septic shock represent around 10% of the ICU admissions with a mortality rate near 50%. The Surviving Sepsis Campaign (SSC) is an international quality improvement program heading to standardize sepsis management.

Objective To evaluate an educational program to implement the SSC strategies in our fourth-level hospital.