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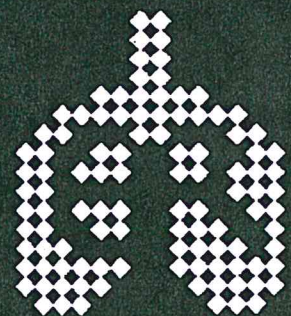
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**Abstracts**

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ferent variants of sepsis connected with severe pneumonia (SP) and non-severe pneumonia (NP).

**Methods:** in the APC during the year of 2003 148 patients suffered from pneumonia (98 males and 50 females, age = 15-75) received treatment. 84 (56,7%) of them had the SP, and the rest - 65 (43,9%), suffered from the NP. The retrospective comparative analysis of SIRS II, III, IV frequency and different variants of sepsis connected with SP and NP gave the following results: The SP patients had no SIRS II while 9 (13,8%) representatives of the NP had SIRS II diagnosed. SIRS III in the SP was diagnosed in 2 (2,4%) cases, in the NP there were 10 (15,3%) cases ( $p=0,001$ ). While in the SP SIRS IV was found in 82(97,6%) cases, the NP showed the result of only 5(7,7%) cases ( $p<0,001$ ). The frequency of appearance of each criterion of SIRS in the SP and NP forms was analyzed. While 100% of patients of SP had quantity of respirations  $>20$  per min., frequency of heart contractions  $>90$  per min., the NP patients had these criterions detected in 55,3% and 38,4% of cases accordingly. In the 90% of SP cases  $t>38^{\circ}$  ( $96,4\%$ ),  $L>12 \times 10^9$  ( $91,6\%$ ), juvenile forms  $>10\%$  ( $90,5\%$ ) were registered objectively more often. The NP cases of these factors are 15,3%, 12,3%, 16,9% accordingly. In such a way, the presence of SIRS II, III is typical for NP, SIRS IV for SP. In the group of SP sepsis was detected in 26,3% of observations, severe sepsis - in 33,3%, septic shock - in 40,4%.

**Conclusion:** any SP is accompanied by sepsis, and this fact must define the treatment tactics.

## P3395

**Risk factors for ventilator associated pneumonia in a developing country**  
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**Objective:** Ventilator associated pneumonia (VAP) is associated with high morbidity and mortality. This study evaluated the risk factors associated with VAP in a South Asian tertiary care hospital.

**Methods:** A case control study was conducted on adult patients admitted between January 1999 and June 2000. Patients ventilated for more than 48 hours who were not having pneumonia or neutropenia at the time of intubation were included. The primary outcome measure was the risk factors associated with VAP.

**Results:** Seventy cases of VAP were detected in 250 consecutive mechanically ventilated patients. The rate of VAP was 26 cases per 1000 ventilator days. Shock during first 48 hours of ventilation ( $p < 0.0001$ ; OR = 5.9526), transport out of ICU during mechanical ventilation ( $p < 0.0001$  OR = 6.007), re-intubation ( $p = 0.003$ ; OR = 4.234), aspiration of gastric content before intubation ( $p = 0.0076$ ; OR = 3.0736), and use of antibiotics before intubation ( $p = 0.0146$  OR = 2.5521) were found to be independently associated with a higher risk of developing VAP. *Pseudomonas aeruginosa*, *Acinetobacter* species, and/or *Staphylococcus aureus* were the main causative organisms (84%). Patients diagnosed with VAP had higher crude mortality rate as compared with controls (57.1% versus 32.2%).

**Conclusion:** This is the first study from Pakistan that evaluates the risk factors associated with VAP. Some of the risk factors identified can be modified by medical intervention, with a potential to improve outcome of VAP.

## P3396

**Sepsis causes electrophysiological abnormalities of the diaphragm and phrenic nerve**

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Diaphragmatic dysfunction has been implicated in the pathogenesis of respiratory insufficiency during sepsis. This study investigates the electrophysiological alterations of the diaphragm and phrenic nerve during the course of sepsis.

Sixteen rats were divided into sham and sepsis groups. Sepsis was produced using cecal ligation and puncture. Electrophysiology was evaluated by diaphragmatic electromyography and phrenic nerve conduction study, prior to sepsis, at 6<sup>th</sup> and 24<sup>th</sup> hours and on the 7<sup>th</sup> day of sepsis. The histopathology of the diaphragm was examined on light microscopy.

The sepsis group revealed a significant decrease in the amplitudes ( $p=0,001$ ,  $p=0,0001$ ), and prolongation in the durations ( $p=0,006$ ,  $p=0,0001$ ) and in the latencies ( $p=0,0001$ ,  $p=0,0001$ ) of the compound muscle action potentials at 24 hours and on the 7<sup>th</sup> day of sepsis, compared with the sham group. The sepsis group also revealed a significant increase in the amplitudes ( $p=0,04$ ,  $p=0,006$ ,  $p=0,005$ ) and in the total durations ( $p=0,0001$ ,  $p=0,0001$ ,  $p=0,0001$ ) of motor unit action potentials at 6<sup>th</sup> and 24<sup>th</sup> hours and on the 7<sup>th</sup> day of sepsis, compared with the sham group. These findings suggested an axonal degeneration of the phrenic nerve and a demyelinating neurogenic damage of the diaphragm. Histopathologic examination showed a profound inflammatory cell infiltration.

In conclusion, the study showed that significant electrophysiological abnormalities of the diaphragm and phrenic nerve occurs during the early course of sepsis.

## P3397

**Bloodstream ICU acquired infection in a respiratory ICU**  
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To evaluate if the source of the bloodstream infections (BI) and the isolates were determinants of the prognosis in ICU patients (P), all positive blood cultures (BC) obtained after 48 hours of ICU admission were recorded, from 1990 to 2003. BI was considered in the presence of a pathogen in one BC except for *Staphylococci* and fungi, where at least 2 positive BC were needed. In the study period, 3275 P were admitted; 379 BI occurred in 307 P: 11,6 infections and 9,7 P infected per 100 admissions. Of the BI P, 63% died vs 22% without BI ( $p<0,0001$ ). In 139 episodes, BI complicated: UTI (urinary tract infection): 55; VAP (ventilator-associated pneumonia): 51; CR (catheter related): 28. Origin of BI wasn't determined in 66% of cases. When the source of BI was identified the mortality rate was 69; 66 and 53% for VAP, UTI and CR respectively, with no significant differences. Gram-negative bacteria made up 63% of isolates (mainly *Enterobacteriaceae*); Gram-positive bacteria represented 32% (mainly *Staphylococci*); fungi 5%. Mortality rate was 62; 58 and 56% for patients with *Pseudomonas aeruginosa*, *Staphylococcus aureus* and *Enterobacteriaceae* BI, respectively.

**Conclusions:** the UTI as a departure for bacteremia, do not occur with a more severe illness, when compared to other sites in the origin of BI, but their large absolute number puts them in the top list of death rates in P dying with laboratory proven BI. *Pseudomonas aeruginosa* and *Staphylococci* BI were associated with a relative high mortality rate, but the greater absolute number of *Enterobacteriaceae* had a high influence on the mortality.

## P3398

**Inhaled N-acetylcysteine prevents oxidative stress and diaphragmatic dysfunction during sepsis**

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The study investigates the association of oxidative stress with diaphragmatic dysfunction during sepsis and whether inhaled N-Acetylcysteine (NAC) may counteract these possible detrimental effects of sepsis.

Twenty-six rats were divided into sham, sepsis, and sepsis plus NAC treatment groups. Sepsis was produced using the cecal ligation and puncture procedure. NAC treatment (140 mg/day) was given for 7 days, using an ultrasonic nebulizer. Diaphragmatic function was evaluated by electromyography and phrenic nerve conduction study. Oxidative stress was determined by diaphragmatic nitric oxide (NO) and malondialdehyde (MDA) levels. Antioxidant defence was measured by diaphragmatic myeloperoxidase (MPO) and catalase (CAT) activities.

In the sepsis group diaphragmatic NO and MDA levels ( $p=0,02$ ,  $p=0,04$ ) were increased, and diaphragmatic MPO and CAT activities ( $p=0,02$ ,  $p=0,1$ ) were decreased compared with the sham group. NAC treatment decreased NO and MDA levels ( $p=0,01$ ,  $p=0,03$ ), and increased MPO and CAT activities ( $p=0,04$ ,  $p=0,15$ ) compared with the sepsis group. In the sepsis group, electrophysiological studies suggested an axonal degeneration of the phrenic nerve and a demyelinating neurogenic damage of the diaphragm. NAC treatment significantly ameliorated these electrophysiological findings ( $p=0,0001$ ).

In conclusion, oxidative stress has a significant role on diaphragmatic dysfunction, and inhaled NAC treatment prevents the oxidative stress and diaphragmatic dysfunction during sepsis.

## P3399

**The influence of inadequate starting empirical antimicrobial therapy of septic pneumonia on outcomes at patients with angiogenic sepsis**

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**Study objectives:** To study the influence of irrational starting empirical antimicrobial therapy (EAMT) of septic pneumonia at parenteral drug abusers with angiogenic sepsis.

**Materials and methods:** Study was included 63 patients (39 men and 24 women aged 16-10) with angiogenic sepsis, associated with parenteral drug abuse, which were treated in Altai Regional Pulmonology Centre.

**Results:** The mean APACHE II score was  $9,7 \pm 2,0$ . The most frequently identified bloodstream pathogens and their associations were *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Streptococcus pyogenes*, *Klebsiella* spp., *Enterococcus* spp. The criteria of inadequate starting EAMT were considered as later began of therapy (16 patients) and/or an irrational choice of initial antimicrobial regimen (31 patient). Adequate starting EAMT was prescribed to 28 patients (44,4%), inadequate - to 35 patients (55,6%). Multiple logistic analysis was shown, that inadequate starting EAMT was the independent factor of increase the duration of hospitalization (AOR=6,45; CI 95%:6,38-6,53,  $p<0,001$ ), the worse clinical