Severe Sepsis Clinical Course and Pharmaco-Economic Analysis

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Introduction. Sepsis is widespread among hospitalised patients worldwide. In fact, severe sepsis and septic shock is a major cause of patient admission and mortality in intensive care units and the difficulty to diagnose the initial stage of the disease is a major obstacle to the reduction of mortality from sepsis. The sepsis is also one of the most expensive diagnoses in the world, representing a significant health burden. The annual costs of the U.S. in 2011 were more than 20 billion dollars. And the costs are rising by an average of 11.9% each year.

Aim, Material and Methods. The aim of this study was to clarify treated septic patients clinical course and pharmaco-economic analysis. The retrospective analysis of 72 patients` medical records was carried out, stratified by year of treatment outcome (dead/alive). The research included both sexes and patients of all ages who were hospitalised at Riga East Clinical University Hospital inpatient unit "Gaiļezers" between 2011 and 2014. Data were described using means with standard deviations (SD), median with interquartile range (IQR), Mann–Whitney U method, chi-square tests. Data statistical analysis was done in SPSS.

Results. Summarising the results, 40 (55.6%) patients involved in the study were men, 32 (44.4%) were women. The age of patients ranged from 22 to 90. The average duration of the patients' illness and hospitalisation time was 5.6 (SD 8.2) days. At the prehospital stage, no patients received antibiotic therapy. Upon occurring at the hospital, procalcitonine rate for the dead patients was greater than to the survivors, it was 44.5 ng/ml and 29.1 ng/ml (p = 0.018), respectively. The average duration of treatment at the sepsis clinic was 9.4 (SD 6.9) days. The respiratory system dysfunction was the most common 48 (66.3%), renal dysfunction developed in 25 (34.4%) cases. Artificial lung ventilation was received by 43 (59.7%) patients, the renal replacement therapy by 13 (18.1%) patients. For the dead patients, statistically reliably, (75%, p = 0.01) the artificial lung ventilation was more required, the renal replacement therapy was received by 25% (p = 0.12). Septic shock was observed to 34 (48.6%) of all patients and 21 (60.0%) of them died. Plating of blood was positive to 32 (44.4%) patients. The most common final clinical diagnosis was pneumonia – 34 (47.2%), followed by intra-abdominal infection – 16 (22.2%). Total hospitalisation costs by 72 patients were 160,236 euros. Of this amount, 71,494 euros by 72 patients constitute a bed-day price, manipulation costs of 70,742 euros and medication costs 18,000 euros. The average hospitalisation costs per patient are 2226 (SD 1830) euros.

Conclusions. Our research data showed that patients are hospitalised late and no patients received antibiotic therapy at the prehospital stage. In the course of the disease, almost half of the patients 34 (48.6%) had septic shock development, which results in high mortality. The study results showed that for patients with septic shock the mortality rate exceeded half – 60.0%. Severe sepsis is expensive diagnosis, because the average cost of one patient exceeds costs of other departments by 4.5 times.