ABSTRACT

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Title: Septic states of newborns

Bachelor thesis

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Field of study: medical laboratory technician

Background: The aim of the work was to sample information on the issue of septic states of newborns, to describe laboratory diagnosis of examining neonatal sepsis. To map rate of the most common pathogens causing this illness in Masarykova hospital in Ústí nad Labem.

Method: Tracking of sampled blood cultures at neonatal department between years 2011–2015. Comparison of total amount of blood cultures with the amount of positive blood cultures and the rate of particular pathogens causing neonatal sepsis.

Results: During the reporting period were collected a 5271 blood cultures to total count. 1047 of those were positive, making it 20 %. The most prominent causes of neonatal sepsis is above all coagulase-negative *Staphylococcus* with the count of 801 occurrences, which is 76,5 %. Followed by Gram-negative facultative anaerobic rods with 103 occurrences (10,8 %), Anaerobic bacteria with 48 counts (4,6 %), *Enterococcus* species with 31 counts (3%), *Staphylococcus aureus* with 26 counts (2,5 %), *Streptococcus* species with 21 counts (2 %) and Yeasts with 7 counts (0,7 %).

Conclusions: Neonatal septic state is a serious illness, which will be based of examination of blood on cultivation for a long time. Capturing the cause of this illness, its determination and determining the sensitivity implies a successful treatment. Automated systems for blood cultivation used for sepsis diagnosis provide fast and reliable results. VersaTREK/ESP cultivation system II device, BacT/Alert 3D device and MALDI-TOF device can make faster the identification and can be as help in the saving of a newborn.

Keywords: Sepsis, newborn, blood culture, cultivation of bacteria.