
EARLY ONSET CANDIDA INFECTION IN THE NEONATE: RISKS AND TRENDS

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Background: Candida infection is an increasingly common complication in the NICU. Several factors place this population at risk, including: antibiotics, intubation, and central venous lines. Maternal factors such as prolonged rupture of membranes, vaginal infection, and prenatal antibiotics increase the risk of early disease.

Objective: To describe factors that place neonates at risk for Candida infection or colonization in the first week of life (early onset disease/EOD) and to compare this group with those who acquire Candida infection after one week (late onset disease/LOD). Trends in Candida sepsis were also studied.

Design/Methods: A retrospective chart review from 1992-2003 was done at a tertiary care center. NICU files, infectious disease consult forms, and medical records search with ICD-9 codes identified infants. Any neonate with a Candida isolate from a sterile or nonsterile body site (if systemic treatment was given) was included. A univariate comparison of the EOD and LOD groups was conducted (Chi-square, student t-test). The observed frequency of Candida infection by year was analyzed by chi square test of linear trend (Cochran).

Results: In the EOD group (n=21), 33% had positive blood cultures compared to 78% in the LOD (n=51, p <0.005). More neonates in the EOD group had positive skin cultures than in the LOD (48% vs 10%, p<0.001). A greater proportion of the LOD neonates were born via c-section than those in the EOD group (p<0.10). Antibiotic use, intubation, and maternal factors didn't vary significantly among the groups. TPN (p<0.05) and central venous lines (p<0.005) were used more often in the LOD group. The mean gestational ages and birth weights in the groups were 29.2 wks/1501g in the EOD and 27.7 wks/1085g in the LOD group. Placental pathology in the two groups revealed that 45% of the EOD showed fungal involvement vs 2% of the LOD (p<0.0001). The rate of Candida infection out of all admissions by year was significant (p<0.0001), but there was no significant linear trend over time. The rate of EOD significantly increased over time in relation to all NICU admissions during the 12 years (p<0.025).

Conclusions: EOD is increasing in frequency in our hospital. Vaginal delivery was shown to be a greater risk factor in the EOD vs LOD group. More neonates in the LOD group had positive blood cultures; this is likely related to a greater number of interventions (e.g. TPN and CVL) in this group over time. The typical presentation of EOD presenting with skin infection was seen in our neonates. Continued monitoring of EOD in the NICU is warranted.