

Identification and management of newborns at risk of infection in ASST Brianza: focus on neonatal sepsis

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Objective. Neonatal sepsis is the leading cause of mortality and morbidity in the newborn (0.3-2‰ live births). Many maternal and neonatal risk factors predispose to sepsis. Prognosis depends on early diagnosis and treatment. The evaluation of the correlations between maternal clinical presentation, placental damage and neonatal outcome in women/infants with risk factors of early onset sepsis (EOS).

Materials and Methods. Retrospective observational cohort study on 240 women and their newborns with risk factors for EOS born in 2021 in ASST Brianza (newborn 3367), whose placentas were sent for histological examination. In order to identify neonatal infections and EOS, maternal risk factors (such as Triple I) and neonatal characteristics were assessed; Kaiser score was calculated.

Results. Out of 3367 newborns, one case of EOS and 63 cases of neonatal infection were reported, of which 27 (43%) were identified by antenatal risk factors with placental exam. The **Table 1** summarises their characteristics. At multivariate analysis, intrapartum fever and Apgar score at 5 min were independently associated to neonatal infection. Comparing the diagnostic performance of prenatal Kaiser score and Triple I as predictive tests of EOS: Triple I has higher sensitivity and VPN than the Kaiser score (89% vs 29%, 98% vs 90%); Kaiser score has higher specificity, VPP and diagnostic accuracy than Triple I (90% vs 60%, 27% vs 22%, 83% vs 61%).

Conclusions. By integrating prenatal risk with clinical evaluation of the newborn, the Kaiser score is useful for identifying infants who need antibiotics. Shared protocols can promote placental exam and observation strategies optimizing diagnosis of infection and reducing antibiotic use.

Table 1. Maternal/neonatal characteristics and their significance: comparison between healthy infants (n = 213) and infants with infection (n = 27).

Maternal risk factors	p-value
GBS +, duration of ROM ≥18 hours, inadequate antibiotic prophylaxis, leukocytosis	>0,05 (n.s.)
Intrapartum fever	<0.0001
Suspected Triple I (with fever ≥38°C)	<0.0001
Histological confirmation of Triple I	<0.0001
Meconium-stained amniotic fluid	0.0486
Maternal tachycardia	<0.0001
Maternal CRP ↑	0.0002
Kaiser score ≥0,65	0.0251
Neonatal characteristics	
Gestational age, FHR monitoring type 2-3, cord-blood acidosis, feeding problems, impaired glycemia, resuscitation at birth	>0,05 (n.s.)
Fetal tachycardia	0.0033
Respiratory distress	0.0433
Use of respiratory support	0.0168
Impaired muscular tone and/or reflexes	0.0110
Abnormal skin color	<0.0001
Neonatal CRP ↑	<0.0001
Neonatal leukocytosis	0.0014