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Commentary

Neonatal Cord Blood for Screening of Early Onset Sepsis

Nora Hofer*

Department of Perinatal Education, University of Illinois, Chicago, USA

DESCRIPTION

The first hematologic supply from the newborn is umbilical cord blood. The idea of using umbilical cord blood is not new. Although it can be a helpful diagnostic tool for sepsis with an early onset, its usage is currently rather infrequent. Blood culture obtained from a peripheral vein is the gold standard for diagnosing newborn sepsis. However, there is variation in blood culture sensitivity because of insufficient sample volume, antibiotic use before sample collection, and intrapartum antibiotic use. Peripheral vein culture is also a painful procedure that needs trained medical professionals to spend quality time sampling. On the other hand, the use of umbilical cord blood does not result in the infliction of pain, iatrogenic stress, or procedural problems [1].

Umbilical Cord Blood Culture (UCBC) has been shown in prior studies to be safe and reliable for use in evaluating sepsis in asymptomatic term infants as well as in routine screening for early-onset sepsis in neonates with maternal risk factors. It has also been shown that neonates at high risk had higher UCBC positive rates (between 20 and 47%) [2].

Neonatal infections were included if at least one of the mother's risk factors for infection was present: prolonged membrane rupture (PROM) (>12 hours), chorioamnionitis, more than three vaginal examinations following ROM, intrapartum fever (oral temperature >38°C), sustained foetal tachycardia (HR >160/min), maternal leucocytosis (Total WBC >15000/cmm), foul-smelling alcohol, and untreated or only partially treated antenatal urinary tract infection. newborns born at less than 28 weeks' gestation, weighing less than 1000 grams, having fatal congenital defects, and having parents who refuse to participate in the study despite the fact that they have risk factors for infection Sepsis was considered to be present in newborns with two or more clinical symptoms and one or more abnormal test value (s) or, among the study's participants, newborns with two or more abnormal test values and one or more clinical symptom (s) were considered to have sepsis.

The following categories were used to group newborn newborns with clinical features and test results suggestive of sepsis; Group A - Valid If a newborn baby had clinical signs of sepsis and had a positive blood culture along with accompanying laboratory results, sepsis was diagnosed [3]. Group B probable sepsis is identified in a newborn child with a negative blood culture if there are two or more clinical signs and symptoms of sepsis, as well as one or more abnormal laboratory markers, or if there are two or more abnormal laboratory markers along with one or more clinical signs and symptoms of sepsis. The other neonates were classified as having no sepsis if they had no clinical symptoms and/or positive test results but were at risk of infection [4]. Kids born with proven sepsis were given antibiotics for around 14 days, babies born with probable sepsis were given antibiotics for about 7 to 10 days, and babies delivered without sepsis were given antibiotics on average for 3 days. Group C is the control group, which consists of newborns with similar demographic characteristics to the case group and birth weights Appropriate for Gestational Age (AGA), who were spontaneously or voluntarily delivered *via* LUCS by healthy women without a history of bacterial infection risk factors or laboratory evidence of infection, and who did not receive antibiotics during or before delivery.

In contrast to individuals with low risk of infection, those with risk of infection had higher levels of the IT ratio and CRP, which are a stronger signal to spot early-onset sepsis in the umbilical cord blood as well as in the venous blood. CRP results that are negative are supposed to be more helpful in ruling out infection. Umbilical cord blood cultures were not a reliable method for determining the cause of early-onset sepsis [5]. Raised CRP readings and I/T ratio in neonates' umbilical cord blood as well as venous blood are caused by a number of prenatal and intrapartum EONS risk factors.

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Correspondence to: Nora Hofer, Department of Perinatal Education, University of Illinois, Chicago, USA, E-mail: hofer@7356.com

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