Wide variations found in evaluation of newborns for sepsis: survey
by Carla Kemp, Senior Editor

The evaluation of well-appearing term infants for early-onset sepsis (EOS) varies considerably among hospitals, with some doing extensive work-ups and giving antibiotics while others simply observe and provide newborn routine care, a new study has found.

"Despite guidelines provided by national professional organizations such as CDC and AAP, we found no consistent overall standard of care for EOS evaluation and treatment," authors wrote in the study "Variation in Sepsis Evaluation Across a National Network of Nurseries" (Mukhopadhyay S, et al. Pediatrics. Feb. 8, 2017, http://dx.doi.org/10.1542/peds.2016-2845).

In addition to guidelines from the Centers for Disease Control and Prevention and the Academy, other approaches have been proposed to assess newborns’ risk for EOS. However, it is not known how often clinicians use any of these approaches, according to the authors.

Therefore, researchers surveyed 97 nurseries participating in the Better Outcomes through Research for Newborns (BORN) network to find out if they used the CDC 2010 perinatal group B streptococcal (GBS) guidelines, AAP guidelines, a sepsis risk calculator or a local approach to assess sepsis risk in well-appearing infants born at 37 weeks’ gestation or later.

The 19-item questionnaire also asked about perinatal factors used to identify newborns at risk for EOS, use of lab tests and empiric antibiotic treatment, and whether mothers and newborns were separated during evaluation and treatment.

Of the 81 hospitals that responded, 60% reported having written institutional sepsis protocols, 33% said they had no policy and 6% were unsure.

Perinatal factors used most frequently to identify infants at risk for EOS were an obstetrical diagnosis of chorioamnionitis and prolonged rupture of membranes (PROM), both of which were used by 98% of respondents. Other factors cited were inadequate group B strep intrapartum prophylaxis even without PROM (93%), fetal tachycardia (68%) and maternal fever without chorioamnionitis (79%).

Nearly 46% of respondents said they follow CDC guidelines to manage an infant with maternal chorioamnionitis, 15% adhere to AAP guidelines, 14% use a sepsis risk calculator, 13% use local protocols and 13% allow provider discretion.

When asked which perinatal factor, in isolation, would result in lab tests, answers included obstetric diagnosis of chorioamnionitis (cited by 86% of respondents), maternal fever over 101 degrees Fahrenheit without chorioamnionitis (31%) and rupture of membranes for more than 24 hours (21%). Lab tests used included complete blood count with differential, blood culture, C-reactive protein and blood glucose in various combinations.

The vast majority (85%) said chorioamnionitis would prompt the use of empiric antibiotics, while the remaining perinatal risk factors would result in antibiotics at less than 15% of hospitals.

Finally, mothers and infants were separated for some period of time at 95% of hospitals, with only 52% allowing rooming-in if the mothers were receiving antibiotics.

The authors concluded that well-appearing infants are considered at different risk for EOS and treated differently depending on where they are born.
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"In practice," they said, "this means the same infant may have no evaluation or NICU admission; no laboratory testing or multiple tests; no antibiotics or prolonged antibiotics; and discharge after 24 hours or at a week of age."

In a related commentary, James J. Cummings, M.D., M.S., FAAP, vice chair and professor of pediatrics at The Children's Hospital at Albany Medical Center, said the extreme practice variations are concerning.

"What the survey by Mukhopadhyay et al does tell us," he said, "is that assessment and management of the well-appearing newborn at risk for EOS has significant room for improvement ..."