

Biomarkers for identifying infant infections

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Premature infants are particularly susceptible to infections, owing to their underdeveloped physiology and requirement of numerous medical interventions. Credit: Stephen Kingsmore, NCGR

Infection is the leading cause of infant deaths worldwide, and particularly a common killer of weaker, pre-term infants. Current diagnostic tests can be slow and non-specific, but researchers have now identified potential biomarkers in the blood that can rapidly identify both the onset of infection and type of microbe.

The circulatory system is a major hotbed of immune system activity, so Stephen Kingsmore and colleagues analyzed plasma samples from 107 infected and non-infected premature infants to try and identify proteins that could reliably identify an infected state.

Their analysis revealed eight proteins, associated with immune responses like inflammation and blood coagulation, which were consistently over-

expressed in infected neonates. In addition, the relative levels of these serum proteins could provide insight into the type of infection (for example, the inflammatory proteins IL-6 and IL-8 were 1000-fold higher in streptococcus infections compared to other types).

Kingsmore and colleagues do note that these biomarkers are not completely accurate and thus not ready for any routine use, but with additional studies using larger numbers on infants and different types of analysis (some of which are already underway), a reliable set of infection biomarkers may soon become available.

Source: American Society for Biochemistry and Molecular Biology

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