Life-threatening condition in preemies linked to blood type

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Many premature infants suffer a life-threatening destruction of intestinal tissue called necrotizing enterocolitis (NEC).

Now a Loyola University Medical Center study has identified a major risk factor for NEC: Preemies with the AB blood type who develop NEC are nearly three times as likely to die from it as preemies with other blood types.

The finding suggests that a simple change in blood transfusion practices in neonatal ICUs could significantly reduce the incidence of NEC.

The study is published online ahead of print in the Journal of Perinatology. Senior author is Jonathan Muraskas, MD, co-medical director of Loyola's neonatal ICU. First author is Tricia Thomson, MD, an assistant professor in the Division of Neonatology.

NEC is the most common serious gastrointestinal disorder among preterm newborns. Each year, it affects about 7,000 newborns born at least eight weeks premature or weighing less than 3 pounds, 5 ounces.

NEC occurs when the lining of the intestinal wall dies and tissue falls off. Most cases of NEC are mild to moderate and can be successfully treated with antibiotics. But in severe cases, a hole can develop in the intestine, allowing bacteria to leak into the abdomen and causing a life-threatening infection.

Each year, the number of babies who die from NEC approximates the number of children under age 15 who die of leukemia or meningitis.

NEC likely involves several factors, including a decrease in blood flow to the bowel, infection, mechanical injury and abnormal immune response.

Thomson, Muraskas and colleagues examined records of 276 preemies in Loyola's neonatal ICU who suffered severe NEC during the last 24 years. AB preemies were 2.87 times more likely to die from NEC than babies with other blood types.

Preemies often require multiple blood transfusions. Neonatal ICUs typically give Type O, the universal donor type. But this practice may inadvertently cause an enhanced immune reaction. This reaction, in turn, could be a reason why AB babies who develop NEC have a higher mortality.

Researchers suggest it may be prudent to change transfusion practices so that preemies receive their specific blood types, rather than the universal donor Type O. "Although this will likely not eradicate NEC, it is an easily modifiable factor that may help to prevent those cases of NEC that develop in relation to the transfusion of blood products," researchers wrote.

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