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Opinion

Diagnostic Status of Stool for Occult Blood in Predicting the Development of Necrotising Enterocolitis

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Abstract

Stool for occult blood is a frequently ordered test and a common finding in neonatal intensive care unit (NICU). To determine the incidence of occult hematochezia and its diagnostic status in predicting the development of necrotising enterocolitis (NEC) a prospective study was conducted at a tertiary level referral nursery.

Keywords: *Occult Blood; Necrotising Enterocolitis; Low Birth Weight; Sensitivity*

Abbreviations

NEC: Necrotizing Enterocolitis

Introduction

Occult blood in stool is a frequently ordered test by clinicians in preterm babies with feed intolerance although it is a minor criterion for diagnosis of NEC [1]. Literature search revealed that the value of occult hematochezia in diagnosis of NEC is questionable [2]. However, limited laboratory tests to predict NEC in its early course, makes the physicians to rely heavily on this test causing unnecessary restriction of feeds and secondary investigations.

Materials and Methods

A prospective study was conducted from August 2011- August 2012 at a tertiary referral NICU in babies weighing less than 2000 grams. Babies with clinical disseminated intravascular coagulation, visible upper or lower gastrointestinal bleed, cracked nipple in mother or swallowed maternal blood were excluded from the study. A total of 80 babies were enrolled. 3 consecutive morning stool samples starting from day 1 of admission were tested for occult blood using guaiac based hemoccult slide test. Even a single positive test was considered positive. Babies were monitored for development of definitive NEC throughout the hospital stay based on Bell's staging. Chi square test was applied.

Results and Discussion

Out of 80 babies, 43 babies (53.7%) tested positive for occult blood. 3 (4%) babies developed NEC, of which one had occult hematochezia before developing NEC. Incidence of NEC in babies with one or more blood positive stool test (2.3%) was less than that with blood negative stools (5.4%). Sensitivity and specificity of this test in predicting NEC was 33.3% and 45.4% respectively. Positive predictive value of stool occult blood was 2.3%. ($X^2 = 0.52$, $p = > 0.5$).

Guaiac based tests are readily available inexpensive and not affected by the site of bleeding with sensitivity and specificity of 90% and 92 % respectively [3,4]. Incidence of hematochezia (53%) in our study was similar to Abramo., *et al*. (58% in 95 neonates weighing less than 1800 grams) [5]. Stiles., *et al*. Yossuck., *et al*. and Noland., *et al*. have reported the incidence to be 77%, 14.5% (daily prevalence) and 8.5% respectively [6-8]. The association of occult hematochezia and NEC has not been studied much. Abramo., *et al*. in their prospective study found no relationship between the development of NEC and preceding occult blood in the stools [5]. Similarly, in the study by Stiles., *et al*. only 1 infant developed NEC who had tested negative for occult blood in stool [6]. The results are consistent with ours.

The limitations of the study were that neonates with nasogastric tube in situ were not excluded and stool occult blood was tested only during first 3 days of admission. A positive test prompts the physician to withhold enteral feeds causing increased usage of parenteral nutrition, prolongation of hospital stay, exposure to nosocomial infections and X-rays, excessive use of antibiotics and overall increased expenditure of NICU.

Conclusion

Test results from the limited available data and our study show that a positive stool occult blood test is a frequent finding but is an insensitive and non-specific predictor of NEC. Thus, it has a doubtful significance and seems unnecessary investigation causing burden on neonatal unit until large multi-center trials establish its diagnostic value.

Conflict of Interest

There is no conflict of interest.

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