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Comparative study of the polaroid and digital non-mydriatic cameras in the detection of referable diabetic retinopathy in Australia

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Aim: To show that the non-mydriatic retinal camera (NMRC) using polaroid film is as effective as the NMRC using digital imaging in detecting referable retinopathy.

Method: A series of patients with diabetes attending the eye out-patients department at the Royal Victorian Eye and Ear Hospital had single-field non-mydriatic fundus photographs taken using first a digital and then a polaroid camera. Dilated 30° seven-field stereo fundus photographs were then taken of each eye as the gold standard. The photographs were graded in a masked fashion. Retinopathy levels were defined using the simplified Wisconsin Grading system. We used the κ statistics for inter-reader and intrareader agreement and the generalized linear model to derive the odds ratio.

Result: There were 196 participants giving 325 undilated retinal photographs. Of these participants 111 (57%) were males. The mean age of the patients was 68.8 years. There were 298 eyes with all three sets of photographs from 154 patients. The digital NMRC had a sensitivity of 86.2% [95% confidence interval (CI): 65.8, 95.3], whilst the polaroid NMRC had a sensitivity of 84.1% (95% CI: 65.5, 93.7). The specificities of the two cameras were identical at 71.2% (95% CI 58.8, 81.1). There was no difference in the ability of the polaroid and digital camera to detect referable retinopathy (odds ratio: 1.06; 95% CI: 0.80, 1.40; P=0.68).

Conclusion: This study suggests that non-mydriatic retinal photography using polaroid film is as effective as digital imaging in the detection of referable retinopathy in countries such as the USA and Australia or others that use the same criterion for referral.

Necrotizing enterocolitis in a preterm infant newborn and role of feeding- An update: A clinical case report presentation

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Statement of the Problem: It's a clinical case presentation of a male preterm infant newborn (+31 weeks) who was delivered in our hospital and transferred to our NICU because of Prematurity, VLBW and needs respiratory support.

Method: Baby shortly undergo necrotizing enterocolitis (NEC) on 5th day of life shortly after start of expressed milk feeding, which was early detected by use of near infrared abdominal spectroscopy (NIRS). Baby was deteriorated clinically in a couple of hours and undergo intestinal perforation with peritonitis. So, abdominal exploration surgery with intestinal resection and end to end anastomosis was done urgently. Baby improved gradually and early feedings was started and gradually increased up to full feedings with use of Human Fortified Milk (HMF) and probiotics, prebiotics.

Finding: The study stated the evidence-based feeding strategies guidelines for necrotizing enterocolitis (NEC) among very low birth weight infants and role of trophic feedings, probiotics, prebiotics and micronutrients in prophylaxis, prevention and management of NEC.

Recommendation: Prematurity is the single greatest risk factor for NEC and avoidance of premature birth is the best way to prevent NEC. The role of feeding in the pathogenesis of NEC is uncertain, but it seems prudent to use breast milk (when available) and advance feedings slowly and cautiously. NEC is one of the leading causes of mortality and the most common reason for emergent GI surgery in newborns. NEC remains a major unsolved medical challenge, for which no specific therapy exists and its pathogenesis remains controversial. A better understanding of the pathophysiology will offer new and innovative therapeutic approaches and future studies should be focused on the roles of the epithelial barrier, innate immunity, and microbiota in this disorder. Bioinformatics modeling is a new emerging strategy aimed at understanding the dynamics of various inflammatory markers and their application in early diagnosis and treatment.

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