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Update on retinopathy of prematurity

Risk factors, classification and natural history of ROP:

ROP starts within a few weeks of birth and can progress rapidly over the following few weeks or regress spontaneously. The international classification describes 5 stages, 3 zones and plus disease tortuosity and dilation of retinal blood vessels. Risk factors for ROP include increasing prematurity, intrauterine fetal growth restriction and a range of postnatal risk factors including hyperoxia and fluctuating hypo-/hyperoxia, sepsis, failure to gain weight, thrombocytopenia and transfusion with blood products. Infants who are unstable and who develop necrotising enterocolitis and bronchopulmonary dyplasia are particularly at risk. Control of these risk factors requires high quality neonatal care from immediately after birth.

Screening for ROP: Which babies, when, where, how and by whom?:

The purpose of screening for ROP is to detect infants who develop the constellation of signs where there is a significant risk of progression to blinding retinal detachment (i.e., 15% risk, described as Type 1 ROP). Criteria for screening need to vary depending on the population of babies developing Type 1 ROP: In low and middle income countries wider criteria are needed than in high income settings. The standard approach to screening entails examination by an ophthalmologist using an indirect ophthalmoscope; Alternatives include digital imaging with cot-side or remote interpretation of the images. The first screening episode should start by 4 weeks after birth and subsequent screening is determined by the findings. At each screening episode a management decision is needed: Discontinue screening; Screen again and when, or urgent treatment is needed. Screening of inpatients must take place in the neonatal unit; Discharged infants can be examined in the unit or eye department. Findings and the management decision must be documented and communicated.

Treatment of ROP: Indications, current uncertainties and follow up:

Type 1 ROP is the current indication for treatment. Treatment must be delivered within 48-72 hours as the condition can progress rapidly to retinal detachment. Standard treatment is laser photocoagulation to the avascular peripheral retina, which gives good resolution in around 90% of cases. Laser treatment can be repeated if necessary. AntiVEGF agents are being assessed for the treatment of ROP and although they can be effective in the short term, ROP can reoccur many months later. In addition, there are concerns about the ocular and systemic longer term complications of these agents, which are currently only recommended as "rescue" treatment when laser is not possible.

Biography

Clare Gilbert is an ophthalmologist with a Masters in Epidemiology and an MD in Surgical Retina. She has 28 years experience of research and education in low and middle income countries and co-directs the International Centre for Eye Health, London School of Hygiene & Tropical Medicine. Her research interests are blinding eye diseases of children: She has 300 peer reviewed publications, has written 24 book chapters and has received several awards for her work including from the American Academy of Ophthalmology, the International Council of Ophthalmology, the L'Occitaine Foundation and the Royal National Institute for the Blind's Lifetime Achievement Award. Control of visual loss from ROP is a major area of her research and support to policy development and program design and implementation.

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