

Childhood Blindness: Causes & Prevention

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Abstract

The global prevalence of childhood blindness is approximately 1.4 million. Nearly 500,000 children become blind every year - nearly one per minute. Worldwide, vitamin A deficiency is the commonest single cause of childhood blindness. Childhood blindness can be categorized as preventable & curable. Preventable causes include corneal scars due to vitamin A deficiency, infections & injuries; whereas curable cause include pediatric cataract, glaucoma, retinopathy of prematurity & refractive errors. Of late childhood blindness has been identified as a priority in WHO's global initiative to eliminate avoidable blindness by the year 2020. Immunization, maternal & child health care, health education, good nutrition, provision of essential drugs, clean water supply & good sanitation, control of endemic diseases & treatment of common ailments, sufficient personnel trained in primary eye care are essential for control of childhood blindness.

Keywords: Childhood blindness, Vitamin A deficiency, Prevention of blindness

Childhood blindness can be defined as visual acuity less than 3/60 in the eye with better vision among children below 16 years of age [1]. The global prevalence of childhood blindness is approximately 1.4 million & nearly 75% of the world's blind children live in Africa & Asia. Prevalence varies from approximately 0.3/1000 children in developed countries to 1.2/1000 in developing countries [2]. India has an estimated 3,20,000 blind children [3]. Recent analysis show that nearly 500,000 children become blind every year - nearly one per minute [4]. Most of them are either born blind or become blind before their fifth birthday out of which nearly 40% are preventable or treatable. Worldwide, vitamin A deficiency is the commonest single cause of childhood blindness accounting for an estimated 350,000 new cases each year.

Childhood blindness can be categorized as preventable & curable. Preventable causes include corneal scars due to vitamin A deficiency, infections & injuries; whereas curable cause include pediatric cataract, glaucoma, retinopathy of prematurity & refractive errors. Hereditary factors include familial cataract, retinoblastoma or retinal dystrophies; maternal factors include maternal infection with rubella & toxoplasmosis; perinatal factors include retinopathy of prematurity; childhood factors include vitamin A deficiency, measles, external eye infections, harmful traditional eye medicines & eye injuries [5]. However corneal scarring due to measles & vitamin A deficiency is declining in many developing countries due to child survival programmes & proportion due to cataract

is increasing. Surprisingly Refractive error contributes to about 19% of total blindness worldwide [6]. Analysing childhood blindness, the frequently affected parts of the eyes include whole globe (36%), cornea (36%), lens (11%), retina (6%), optic nerve (5%), uvea (2%) [3,7].

Of late childhood blindness has been identified as a priority in WHO's global initiative to eliminate avoidable blindness by the year 2020 [2]. VISION 2020 programme has formatted an integrated approach based on three core strategies - Human Resource Development, Infrastructure Development & Disease Control. Immunization, maternal & child health care, health education, good nutrition, provision of essential drugs, clean water supply & good sanitation, control of endemic diseases & treatment of common ailments, sufficient personnel trained in primary eye care are essential for control of childhood blindness.

Pregnant woman with night blindness or Bitot's spot should take 10,000 IU of vitamin A orally for 2 weeks & after delivery she should receive 3 doses of vitamin A 200,000 IU on Day 1, Day 2 & Day 8 to ensure adequate supply in her breast milk. Weaning foods should be rich in vitamin A. Vitamin A capsules 200,000 IU may be given every 3-6 months to children aged 1-6 years of age who are at high risk. Conjunctivitis can be prevented by antenatal screening of pregnant women for gonococcal & chlamydial infections & use of topical antibiotics or antiseptics for infected babies [8]. Cataracts caused by

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congenital rubella can be prevented by immunisation. Prevention of blindness from ROP depends on preventing preterm birth & intensive neonatal care of premature babies with early detection of ROP. Visual loss in children due to trauma can be minimised by legislation to restrict dangerous toys & fireworks. Child eye health practices should be instituted at community as well as at primary, secondary & tertiary health care levels with direct engagement of other social public sectors.

There is need for awareness among community about ocular health through mass media, awareness campaigns, rallies, posters & exhibitions. Vision testing must be added in child health programme. Annual school health check-ups must focus their attention towards vision impairment.

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