DS (Child) H J 2022; 38(2): 68-69

EDITORIAL

Newborn Screening, Where We Are

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Through early identification, newborn screening provides an opportunity to early treatment and thereby to prevent disability from many diseases which are not apparent in neonatal period. Though the system requires huge investment, the benefits far exceed the cost as it helps in reducing the mortality and morbidity of these diseases. It is carried out in almost all the western countries and a large number of countries in Asia and elsewhere. In USA it has been initiated in 1960. Initially it used to be done by the filter paper test introduced by Guthrie. Now from 1990s tendem mass spectrometry burst into the field and rapidly spread around the world. Gradually hearing screening, screening for retinopathy of prematurity and screening for critical congenital heart disease by pulse oximetry has been introduced.[1,2]

The list of conditions for which screening is carried out differs from country to country, based on the prevalence of the condition and available resources. Universal screening for about 40 to 50 metabolic disorders is mandatory in US, Europe and many other countries across the world. Due to the large number of infants that are usually screened, establishing the proper infra-structure of manpower, space and resources is an essential and important pre-requisite. In 1968, Wilson and Jungner proposed the following criteria for inclusion of a condition in screening: condition should have an important health problem/frequency; test should be acceptable to the population (reliable/simple); disease does not manifest at birth/ routine examination; treatment will prevent mortality and morbidity; delay in diagnosis will cause irreversible damage; and screening is cost-effective.[2,3]

According to WHO, genetic services should be introduced in countries with an IMR less than 50. With this WHO recommendation newborn screening should have been started in our country as we have reached our IMR less than 50 many years back.

Newborn screening movement for congenital hypothyroidism (CH) was first introduced in Bangladesh in 1999 by Bangladesh Atomic Energy Commission (BAEC) and as a regional project on Neonatal Screening for Congenital Hypothyroidism in East Asia (RAS/6/032) of International Atomic Energy Agency (IAEA). Under these projects some 31,802 newborns were screened and 16 were identified with hypothyroidism (1:1987). Later from 2006-2011 another screening program was carried out by BAEC where 96 babies found with CH out of 220000 newborns (1:2300). It is clearly evidenced that incidence of CH was found higher in Bangladesh in comparison to global incidence (1:4000). So routine newborn screening especially for CH should be started in our country.[2,4-6]

Incidence rates of ROP (Retinopathy of Prematurity) ranges from 10% to 46% among low birth weight premature infants. Studies from BSMMU and BSH&I showed incidence of ROP ranges from 24% to 35% in preterm infants. Screening for ROP started in Bangladesh a decade back but it is scattered and limited to some tertiary care hospitals. There is some good collaboration between eye hospitals and children hospitals for ROP screening but limited. It should be institutionalized and throughout the country. Similarly hearing screening for sick neonates is not a routine practice in Bangladesh. A study at BSH&I found hearing impairment on 4.2% among all admitted neonates on 2018.[7-11]

With the control of infectious and communicable diseases and reduction of IMR, the Bangladesh government should prioritize the preventive aspect of health. As universal screening for Bangladesh has huge financial implications, a practical approach can be taken to prioritize the conditions like: For all newborn: Screening for congenital hypothyroidism. For high risk group: Screening for ROP for Preterm baby of less than 34 wks, Screening for hearing impairment for all sick neonates who had been hospitalized, Screening for IEM when suspected.

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