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Editorial

Surgical care in birth defects

Birth Defects are structural or functional anomalies, identified prenatally, at birth or detected later in life. They are also known as congenital anomalies, congenital disorders or congenital malformations. Birth defects may lead to death, chronic illness, disability [physical /mental], catastrophic expenditure, social stigma, abandonment and feticide/infanticide. Birth defects account for 9% of the surgical burden of disease (BoD)[1]. It contributes to disability experienced by 150 million children around the world, with disabilities being more common among children in LMICs[2]. In studies that focused on specific malformations or geographic regions, the incidence of birth defects in LMICs was calculated to be between 3.9 and 11.8 per 1000 live births[3,4]. However, in such studies, birth defects are likely to be under reported due to stigmatization or fear associated with being rejected by the community and missing data due to lack of documentation.

Every year an estimated 8 million children (6% of total births worldwide) are born with a serious birth defect. Additionally, hundreds of thousands more are born with serious birth defects of post-conception origin due to maternal exposure to environmental agents. At least 3.3 million children under the age of 5 years die annually because of serious birth defects. More than 90 percent of all infants with a serious birth defect are born in middle and low income countries [LMICs][5]. A hospital based study in Chittagong, Bangladesh on birth defects showed 44.61% paediatric surgical admissions are due to birth defects and 94% of them coming from poor socio-economic background[6].

One in five neonatal deaths are caused by birth defects. Worldwide each year the number is approximately 303,000 newborn deaths within the first 4 weeks of birth. And most common birth defects that are responsible for these neonatal deaths are serious heart defects, lung defects, genetic conditions and brain conditions[7]. Another alarming fact of birth defects is that it can indirectly attribute to other causes of neonatal mortality. Major birth defects increases the risk of pre-term birth, the number one cause of neonatal mortality. A population-based cohort study of the birth database of the Missouri department of health (1989-1997) including 678,693 singleton live births revealed that pre-term birth risk increased significantly by major birth defects. The risk varied with malformation type and was higher in case of multiple malformations[8]. Many birth defects directly or indirectly cause respiratory distress – like esophageal atresia, congenital diaphragmatic hernia. At birth, many posterior urethral valves (PUV) present with respiratory distress.

Neurological anomalies (spina bifida, hydrocephalus), cleft lip and palate, congenital heart disease (CHD), gastrointestinal anomalies [gastroschisis, omphalocele, intestinal atresia, anorectal malformations (ARM) and Hirschsprung's disease], urological anomalies [undescended testes, hypospadias, disorders of sexual differentiation] and club foot, are the common birth defects in Bangladesh.

Birth defects account for a staggering 62.98 million disability-adjusted life-years (DALYs) worldwide.12.4 million DALYs (57%) are potentially addressable by surgical care[9].

A paediatric inguinal hernia repair costs US$12·41 per DALY averted, compared with $41 per DALY averted for insecticide-treated bed nets to prevent malaria[10].

In LMICs, data are heterogenous, hospital based. There is no national birth defect registry yet. Adequate

fetal or newborn screening and referral systems are not functioning. Skilled manpower to deal with birth defects are not always present in healthcare facilities. Poverty, illiteracy, lack of awareness, fear and stigma worsens the reality.

As the organization of surgeons dealing with birth defects, APSB has to play an active role in advocating for the causes of birth defects:

- Surgery can cure or lessen the effects of many potentially lethal or disabling birth defects
- Surgery is not expensive
- Treating children with birth defects has excellent economic benefits - the affected child becomes a more productive member of society, preventing the spiral of poverty for families of these children.

To prevent birth defects through supporting research related to causes of birth defects, empowering women and girls with health knowledge will give every child an opportunity to attain their optimal level of health.

Surgery is an important but largely under-promoted component of the services required for treatment of birth defects.According to WHO DG, Dr Tedros, surgical capacity is an essential part of Universal Health Coverage [UHC]. Without sufficient investment in surgical care for children it will be impossible to meet the Sustainable Development Goal 3.2 to end preventable deaths of newborns and children under 5-years of age by 2030. Going forward, surgery and surgeons should be a key component of policies and strategies addressing birth defects to ensure their effectiveness.

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