Editorial

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Constrained evidence-based practice

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Neonatal surgery is an evolving specialty. Low-income countries (LICs) lag in achieving acceptable outcomes in surgical neonates. [1] Evidence-based practice (EBP) is the cornerstone to yielding better outcomes. It is a process to collect, analyze, and implement the latest scientific evidence in a specific area of medicine. EBP shifts the basis of decision-making from an orthodox and intuition-based experience to one etched in scientific research. Steps of EBP include identifying a knowledge gap followed by gathering information and its critical appraisal; the evidence gained is implemented in conjecture with clinical expertise and patient values, and lastly, the practice is evaluated. [2]

Modern neonatal surgery services are built on the fabric of research, clinical audit, good-practice-driven protocols, advancements in neonatal intensive care and neonatal anesthesia, the introduction of fine gadgets and equipment, and trained care providers. [3] Sarin YK recently introduced 10 commandments on improving neonatal surgical outcomes in developing countries. [3] Nevertheless, various hurdles and constraints in following EBP exist especially in resource-limited setups. The resultant care becomes partly evidence-based and partly hack-based. This we believe can be termed as constrained evidence-based practice (CEBP).

This approach may not help mitigate high morbidity and mortality in surgical neonates as exemplified by the dismal outcome of patients with gastroschisis in LICs. Assouto et al, [4] recently documented 100% mortality in patients with gastroschisis from Benin. Similarly, Wright et al, [1] compared the outcomes of various congenital anomalies in surgical neonates from 74 countries (Low-income countries- LICs, Middle-income countries- MICs, and High-income countries- HICs). Particularly for gastroschisis, the mortality was 90% in LICs and 1.4% in HICs. [1] The gross difference in outcomes can extrapolate the impact of following EBP versus CEBP.

The evidence suggests that neonates with gastroschisis should have an antenatal diagnosis and should be born in a specialized unit well-equipped with neonatal surgical services. The operation should follow within a few minutes of birth before bowel edema and peel formation ensues. If the defect is not primarily repairable, the umbilical cord can bridge the defect. If complete reduction of the gut poses a risk of abdominal compartment syndrome, a preformed silastic spring-loaded silo is used to gradually reduce the bowel. Parenteral nutrition supports the baby until the bowel starts functioning. [5]

In LICs, the cycle of compromised care begins with the lack of an antenatal diagnosis resulting in the baby being born in a setting that lacks proper neonatal surgical facilities; followed by inappropriate handling of the eviscerated bowel; and improper temperature control, monitoring, and fluid resuscitation. Inadequate transfer facilities further complicate the discourse. [6] When the neonate arrives at a specialized center, crucial time is already wasted. It is not uncommon to see a delay of more than 24 hours in certain areas.

The caring team is confronted with superadded challenges like hypothermia, dehydration, and septicemia, along with a congested, edematous bowel with a thick peel. At times, the eviscerated bowel may become ischemic due to either a narrow defect or a twist of the eviscerated bowel. [6] Given the circumstances, EBP recommends staged reduction of the gut; however, it is constrained by the non-availability of spring-loaded silastic silo, and either a blood collection bag or a urine bag is used in its place— we rarely see these working.

A few authors from LICs who had almost 100% mortality in patients with gastroschisis, recommended resection of the bowel that could not be reduced, and survival was documented with this strategy. [7] Although in our set-up we have less than 10% survival

with a blood bag silo, we are still reluctant to try bowel excision. We wonder how we could improve the outcomes of these patients when the EBP is constrained.

The solutions still lie in tailoring the EBP for local circumstances. Developing and implementing local guidelines at each step of constraints, performing frequent clinical audits to keep the practice guided, promoting indigenous research to develop local guidelines, providing economic support, and ensuring minimum service delivery standards can circumvent these problems. Moreover, the availability of pediatric surgeons with adequate training in neonatal surgery at the peripheral facilities will also address many of these constraints.

Change is hard; changing a traditional practice is even more challenging. We believe solutions will evolve when stakeholders in the local setups brainstorm, collaborate, and agree to develop national health policies and protocols to address these constraints, but we know it is a long journey to follow!.

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