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Intestinal Failure – An Indian Perspective

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This issue of *Indian Pediatrics* carries an interesting review by Goulet, *et al.*(1) on the management of permanent intestinal failure. The definition, various etiologies and management options ranging from home based parenteral nutrition to intestinal transplantation are discussed.

With improvements in clinical nutrition techniques, life expectancy of children with intestinal failure (IF) has progressively increased. The management however is made difficult by the less number of cases, heterogeneity of clinical presentation and need for advanced clinical, nutritional and surgical expertise(2). Parenteral nutrition (PN) constitutes a very important cornerstone in the management of children with IF(2). The development of effective home-based PN program is essential for the successful management of children with IF. Home PN allows

children to grow in the best psychological environment. As highlighted by Professor Goulet, children on home PN also have better results than those in hospital, should they require an intestinal transplant. The North American Home Parenteral and Enteral Nutrition patient Registry indicates a four-year survival on home PN of 80% for short bowel syndrome (SBS) patients. Children who develop complications due to long term PN or those who are unable to achieve intestinal autonomy are the candidates for intestinal transplantation (ITx). One of the first successful attempts at intestinal transplantation with long term survival is credited to Goulet and colleagues in Paris in 1988. Advances made in the field of immunosuppression and surgical techniques have vastly improved the clinical outcomes. In the United States, where nearly 75% of all pediatric intestinal transplants are performed, the overall 5-year graft survival of

46.27% and patient survival of 60.67% has been reported(3). At Professor Goulet's center, the one-year graft and patient survival rates have been 44% and 66%, respectively(4).

A multicentric European survey that used children on home PN as proxy, found the annual incidence of IF to be 2-6.8 per million population(5). In view of scarcity of published data from India, extrapolation of these figures would mean that about 4000 children would suffer from IF per year in our country. Nearly 50% of these could be suffering from SBS. The management of these children would require timely and effective use of PN, often for a period of several months. While PN formulations specifically for use in children are now available in India, their use over extended periods has not yet been practically possible. This has mainly been due to the extended hospital stays required in such cases and the accompanying prohibitive costs. While there have been reservations from families in using PN at home, there are also technical difficulties of maintaining intravenous access for long periods of time in children with the inherent risk of infection.

In the West, successful liver transplantation centers became the pioneers in home based PN and later of ITx(6). These centers have now established ITx programs and are successfully performing both isolated and combined liver-intestine transplants in children. While liver transplantation is now a well-established and successful procedure in India(7), home based PN programs are still lacking. Since the management of children with IF heavily rests on parenteral nutritional support, there is a need to develop effective home-based PN regimes. Only with an effective home PN program in place can one make headway into the field of ITx. Professor Goulet stresses on the development of integrated approach adapted to manage IF, involving both gastroenterologist, pediatric surgeon, dietician,

social worker and nutrition nurse. The experience with liver transplant program has shown that it is possible to set up such a facility using indigenous infrastructure and technical expertise(8,9).

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