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Bladder exstrophy-epispadias complex: Midterm outcomes on upper & lower tract function

Background: Vesicoureteric reflux (VUR) is a common cause of urinary tract infections (UTI) in children. Continuing VUR can cause renal damage by activating the renin angiotensin system (RAS). Subsequently severe bilateral VUR leads to nephropathy. Therapeutic options are: antibiotic prophylaxis & anti-reflux interventions (endoscopic injection or surgery). The endpoints of these modalities are poorly defined.

Aim: To study the incremental changes in renal parameters by anti-reflux intervention in children with VUR who are on antibiotic prophylaxis. Short term and long-term results of anti-reflux procedures: endoscopic injection & surgery, in children with severe grade bilateral VUR. The role of ACE-I therapy in renal recovery is also studied.

Methods: A prospective study conducted from July 2009 onwards at our institute and data pertaining to epidemiological, clinical (including blood pressure), biochemical markers: plasma renin activity (PRA), urine microalbuminuria, glomerular filtration rate (GFR), DMSA scan were recorded and compared in patients with severe grade bilateral VUR before & after anti-reflux intervention and after initiation of angiotensin converting enzyme-1 inhibitors (ACE-I) therapy.

Results: A total of 76 children with severe VUR who underwent endoscopic injection (n:50) & bilateral Cohen's reimplantation (n:26) who were on antibiotic prophylaxis for a mean period of 30 months were included. It was seen that 81% patients (61/76) had >20% improvement in their GFR while only 19% (15/76) showed <20% improvement in their GFR after anti-reflux intervention. There was also significant improvement in other markers of renal injury after intervention, such as, PRA, urinary microalbuminuria, GFR, blood pressure & DMSA scan) in both the groups. Further improvement was observed by adding ACE-I therapy.

Conclusion: In patients with severe VUR, who are on antibiotic prophylaxis, anti-reflux intervention imparts additional incremental benefit leading to improvement in GFR and other markers of renal injury. In the long term, once the surgical effect plateaus, the use of ACE-I also improves renal recovery.

Biography

Minu Bajpai is a Professor of Pediatric Surgery at All India Institute of Medical Sciences, New Delhi, India. He is a full bright Scholar (Johns Hopkins, Baltimore) and an Executive Editor of *Journal of Progress in Paediatric Urology*. He is the President of Indian Association of Pediatric Surgeons (IAPS) from 2014-2015. He received ICMR National awards twice: Dr. Kamala Menon award in Pediatrics, 1995 and Kunti Omprakash Gold Medal in Pediatrics, 2009. He Founded the Indian Society for Pediatric Urology & Asian Society for Pediatric Urology in 1998. He has published 201 journals in peer reviewed.

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