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Clinical Course of Children and Adolescents with Primary Vesicoureteral Reflux: A retrospective study of 958 patients

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Abstract

Introduction. Vesicoureteral reflux (VUR) is the most common pediatric urologic abnormality and since it can predispose to urinary tract infection and resultant kidney scar it is an important issue in pediatric nephrourology.
Methods. A retrospective chart review and follow-up of 958 patients with primary VUR was performed in the Children's Medical Center, Tehran, Iran.
Children with primary vesicoureteral reflux were included in the study and these parameters were studied: age, sex, clinical presentation, VUR grade, sonographic findings, DMSA changes, treatment modality (medical, surgical or endoscopic) and response to treatment, hypertension (presence/absence), urinary tract infection recurrence and development of new kidney scars in patients under medical treatment.
Results. VUR was more prevalent in girls. Sonography was unable to detect VUR in many cases. Presence of renal scars was strongly associated with degree of reflux. Medical management was effective in a substantial percentage of patients and they experienced full resolution of reflux. This was especially true for lower degrees of VUR. 17.6% of patients developed new kidney scars on follow-up which was associated with higher degrees of VUR. Hypertension and breakthrough urinary tract infection was an uncommon finding in our patients.
Conclusion. Medical management, which means using prophylactic antibiotics for prevention of urinary tract infection, is effective in many cases of VUR especially in cases with lower degrees of VUR. Surgical and endoscopic procedures must be reserved for patients with higher degrees of VUR unresponsive to conservative management or in whom new scars may develop.

Keywords: vesicoureteral reflux, pediatric, urinary tract infection

Introduction

Vesicoureteral reflux (VUR) is one of the most common pediatric urologic abnormalities which affects 1-2% of children [1]. VUR is defined as the retrograde flow of urine from the bladder into the ureters and renal pelvis [2]. It is a congenital anomaly which can result in significant sequels like repeated pyelonephritis and the resultant renal scarring, hypertension and renal insufficiency [3]. It is still one of the most common causes of renal failure in children [4]. VUR is classified as primary or secondary to a concomitant condition [5]. Primary vesicoureteral reflux is the result of anatomical defect of the vesicoureteric junction.
Many advances have been made over the past two decades in understanding the pathophysiology and management of VUR in children.
The aim of the present study was to evaluate the clinical course of children and adolescents with primary vesicoureteral reflux.

Materials and methods

This was a retrospective chart review of 958 children and adolescents 1 day to 14 years old, diagnosed with primary VUR who were admitted to the Pediatric Nephrourology Unit of the Children's Medical Center in Theran, Iran between 1993-2007. This hospital is affiliated with Tehran University of Medical Sciences (TUMS). Pa-

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