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SHOCK-WAVE LITHOTRIPSY IN CHILDREN: COMPARISON OF LITHOTRIPSY MACHINES

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Introduction: Shock-wave lithotripsy is a widely used treatment modality in children with a well documented confidence and efficacy. In this study, comparison of our treatment results with the two shock-wave lithotripsy machines which one has been used previously and the other still being used. Patients and Methods : The treatment results of 122 children with Dornier lithotripter **October 2000** has been retrospectively compared with the results of 143 children treated with Elmed lithotripter from **October 2000** to June 2003. All of the children underwent the procedure with normal blood and urine analysis. The procedure has been performed under sedoanalgesia without endotracheal intubation. The stones were located by fluoroscopy or ultrasonography when necessary. The stone presence has been evaluated radiologically at the second week after the procedure and during the follow-up visits. Results: Dornier lithotripter was used for treatment of 122 children with mean age of 8,9 years (8 months-16 years). The number of female and male children were 83 and 39, respectively. The success rates for single stones located in the kidney and proximal ureter showed no difference and has an overall stone-free rate of 75% (71/95). The total response rate with clinically insignificant residues and partial responses was found to be 94% (90/95). The stone-free rates according to stone size were 84,3% (43/51), 67,6% (25/37), 43% 11-20 mm, (3/7) and 22% (6/27) for stones of 10mm >20 mm and with multiple locations, respectively. Elmed lithotripter was used for treatment of 143 children with mean age of 6,5 years (3 months-16 years). The number of female and male children were 85 and 58, respectively. The success rates for single stones located in the kidney and proximal ureter showed no difference and has an overall stone-free rate of 79,5% (101/127). The total response rate with clinically insignificant residues and partial responses was found to be 93,7% (119/127). The stone-free rates according to stone size were 86% (80/93), 68,6% , 11-20 mm, (24/35), 33,3% (1/3) and 50% (8/12) for stones of 10mm>20mm and with multiple locations, respectively. This data concludes that the stone size and multiplicity are the major factors which affect the stone-free rates. In both patient groups no complication occurred during the procedure. There was no complication such as impairment of renal function and serious hematuria following the procedure in any patient. Conclusion: The two lithotripters were found to be similarly safe and effective in treatment of urolithiasis in pediatric population.