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The efficacy of medical expulsive treatment with Doxazosin in pediatric patients

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Aim: To evaluate the possible efficacy of an alpha-1 blocker (doxazosin) therapy on the management and the course of the disease in pediatric patients with distal ureteral stones.

Methods: 45 children (24 boys and 21 girls) with a single lower ureteral stone have been included into the study program. Age range of the cases varied from 3 to 15 (6.65 ± 3.78) years. Children were randomized into two main groups: Group 1 (n= 21), children receiving only ibuprofen 20mg/kg/day (b.i.d); Group 2 (n=24), in addition to ibuprofen, children received 0.03 mg/kg/day doxazosin once daily, for pain control before going to bed during observational follow-up period.

Results: Stone expulsion rates have been noted to be 28.5 % (6/21) in Group 1 and 70.8 % (17/24) in Group 2 ($p=0.001$) respectively. Significant decrease in the frequency of colic attacks ($p=0.04$) and accelerated stone expulsion period ($p=0.001$) did clearly demonstrate the advantage of doxazosin in the medical expulsive management of lower ureteral stones in children. Stones sizing < 5mm were expelled in higher rates than stones sizing 5-10 mm in group 2 ($p=0.046$). Additionally, children aging < 6 years passed the stones with significantly higher rates than children aging 7 years ($p=0.008$).

Conclusions: Use of alpha adrenergic blocker agents in the medical expulsive therapy of lower ureteral calculi in children may accelerate stone passage resulting in diminished number of colic attacks as well as the need for analgesic usage.

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