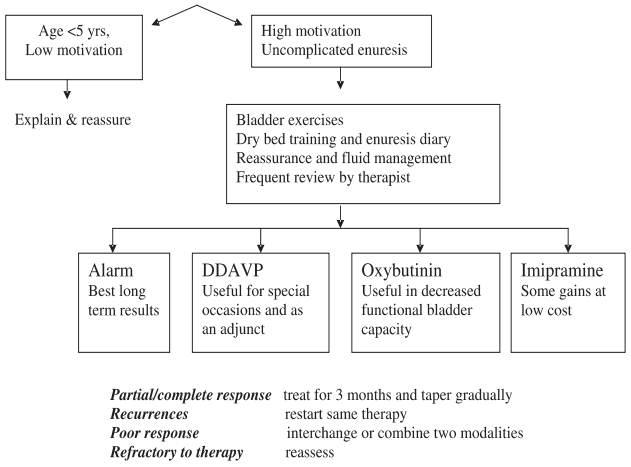

Figure 2 Treatment for primary monosymptomatic nocturnal enuresis

of 0.2 mg increasing to 0.6 mg daily may be given an hour before bedtime. This is now available in the country. Prolonged desmopressin bioactivity may increase the risk of water intoxication, a possible side effect of free water intake by the child when on desmopressin[9].

While therapy is initiated, certain *guidelines* are recommended. The child is started on a low dose of the medication. Thereafter the dose is adjusted every two weeks to the maximum dose required to achieve dry nights. Therapy is continued for 3-6 months of dry nights and thereafter weaned over three to four weeks. In case of a relapse the same therapy is restarted or behavioral modification using an alarm device, is considered in conjunction. A structured withdrawal of therapy rather than tapering the dose of medications seems to improve the outcome[10]. This is achieved by administering therapy alternate day, followed by twice a week etc.

The various treatment modalities available are not used exclusive of each other and often a combination works best. Failure of one form of therapy should result in substitution or addition of another. The three system model, suggesting desmopressin for low vasopressin release, oxybutinin along with bladder training for instability when suspected and the alarm to enhance arousability from sleep works well. A combination of one of these with motivational therapy is ideal. Comparative studies have shown that DDAVP has better short-term results, but the alarm has better long-term outcome. Hence, DDAVP is best used under special situations, e.g., if the child needs to remain dry when camping out or staying over at a friend's place. If long term efficacy, cost and safety are taken into consideration, the enuresis alarm comes out superior[11]. In patients with enuresis and a voiding dysfunction DDAVP can enhance the effect of oxybutinin by reducing urinary output and bladder filling, thus reducing uninhibited bladder contractions. Reassurance and motivation of the child for involvement in the therapy and direct frequent contact with the therapist improves the outcome. An algorithmic representation for the treatment of primary monosymptomatic enuresis is depicted in Figure 2.

REFERENCES

1. ***Mc Lorie GA, Husmann DA.*** *Incontinence and enuresis.* Pediatr Clin North Am *1987; 34: 1159-74.*
2. ***Arena F, Romeo C, Manganaro A et al.*** *Videourodynamic findings in the child with enuresis.* Pediatr Med Chir *1996; 18: 515-28.*
3. ***Kanitkar M Dua T.*** *Nocturnal Enuresis* Indian Journal of Pediatrics *2003; 70: 251-5*
4. ***Barone JG, Ramasamy R, Farkas A, Lerner E, Creenan E, Salmon D, Tranchell J, Schneider D.*** *Breastfeeding during infancy may protect against bed-wetting during childhood.* Pediatrics. *2006;118:254-9.*
5. ***Dharnidharka VR.*** *Primary nocturnal enuresis-where do we stand today? Indian Pediatr 2000; 37;135-40.*
6. ***Kanitkar M.*** *Disorders of micturition* In*: RN Srivastava, Arvind Bagga. editors. Pediatric Nephrology 4th ed. New Delhi, Jaypee Brothers Medical Publishers. 2005 pp 390-409*
7. ***Pennesi M, Pitter M, Bordugo A, Minisini S, Peratoner L.*** *Behavioral therapy for primary nocturnal enuresis.* J Urol *2004;171:408-10.*
8. ***Radvanska E, Kovacs L, Rittig S.*** *The role of bladder capacity in antidiuretic and anticholinergic treatment for nocturnal enuresis.* J Urol *2006;176:764-8*
9. ***Dehoorne JL, Raes AM, van Laecke E, Hoebeke P, Vande Walle JG.*** *Desmopressin toxicity due to prolonged half-life in 18 patients with nocturnal enuresis.* J Urol *2006;176:754-7*
10. ***Butler RJ, Robinson JC, Holland P, Doherty-Williams D.*** *Investigating the three systems approach to complex childhood nocturnal enuresis—medical treatment interventions.* Scand J Urol Nephrol *2004; 38:117-21*
11. ***Glazener CM, Evans JH, Peto RE.*** *Complex behavioural and educational interventions for nocturnal enuresis in children.* Cochrane Database Syst Rev. 2004;CD004668