Questions
Session 7: First line management, clean intermittent catheterization, and anticholinergics

Responses by
Prof. Rafal Chrzan
& Dr. Giovanni Mosiello
1. The best way to determine the time interval between intermittent catheterization (are there any peculiarities depending on the physiological norm for a certain age)?

- Consider age, bladder capacity, fluid intake, renal function and the underlying pathology.

- The standard approach is:
  - Newborns and neonates 6 x day (every 3 hours) and once during the night (e.g. during feeding)
  - > 1 y.o. – 5 x day (every 4 hours) with 8 hrs long night break

- In case of nighttime polyuria indwelling catheter in the night should be considered.
2. What are the recommended medications or their combinations to be prescribed before urodynamics?
   - Antibiotic prophylaxis. A Cochrane analysis of nine randomised controlled trials showed, that the administration of prophylactic antibiotics compared to placebo reduced the risk of significant bacteriuria from 12% to 4% after UD studies.
   - UTI is a contraindication for UD.

3. Does the timing of consumed fluid during the day affect the frequency of catheterization?
   - Yes, either volume and timing, this must be considered in all and mainly in patient with enteral or parenteral nutrition. Other point to consider is the bladder capacity, expected for age, and real BC evaluated by UD, as well as renal function (polyuria)
4. **What percentage of children need surgery?** The majority of patients could avoid surgery with a correct and prompt proactive management.

5. **Management of patients with complete urinary incontinence.**
   This is due poor bladder outlet resistance. Different solutions are available: bulking agents, sling (homologous or heterologous), bladder neck reconstruction, AMS. Solutions must be evaluated considering the individual status, patient’s motivation. Always consider the secondary change in the bladder function due to increased bladder outlet resistance, and the induced risk for the upper urinary tract.

6. **Do you suggest UNCOATED catheter in a bleeding stoma?** If yes, why is that? Isn't it more traumatic than a COATED one, thus delaying healing?
   Uncoated must be used for a continuous bladder drainage, indwelling catheter, as during the night (when required) or for improving healing after bleeding. COATED must be used for CIC only.
7. Do you use combinations of antimuscarinics? Do cannabinoids have any perspective?

As general rule it is always better try to avoid multiple therapy. For NDO the first choice is always oxybutynin. Tolterodine, solifenacine, fesoterodin, trospium chloride and propiverine and their combinations can also be used in children, for no responders or for side effects. In this cases useful to consider intravesical administration, mirabegron, or onabotulinum toxin A too.

Cannabinoids: no experience in pediatric patients with spina bifida. Cannabinoids use could be considered maybe in NDO due to Cerebral palsy. Anyway, no EBM data are reported.