

## A COMPARISON OF URODYNAMIC DATA IN CAUCASIAN AND SOUTH ASIAN WOMEN

### Hypothesis / aims of study

Evidence exists on differences in urodynamic diagnoses and parameters between Caucasian and women of Black African origin, with higher rates of detrusor overactivity (DOA) and lower rates of urodynamic stress incontinence (USI)<sup>1,2</sup> in Black Africans. The only study involving Asian women did not reveal any differences<sup>1</sup>. In our practice we see a high proportion of women of south Indian origin (25%) and had noticed some differences in their presentation. We have compared urodynamic data from Asian and Caucasian women investigated for incontinence in our unit.

### Study design, materials and methods

The urodynamic parameters of consecutive patients who had undergone urodynamic testing in our unit between 2002 and 2003 were reviewed retrospectively. Patients were classified as of Caucasian or South Asian origin on the basis of their names, which is a validated technique<sup>3</sup>. Traces were reviewed for diagnosis and were classified as: Normal, USI, DOA or Mixed (both USI and DOA). In cases of DOA, data on detrusor contraction amplitude, frequency and the volume at which the first contraction occurred were extracted. Comparisons of all urodynamic data between Caucasian or South Asian women were performed using Mann-Whitney U test. Significance was set at 5%. All urodynamic parameters are reported as median [interquartile range] or mean  $\pm$  standard deviation ( $\pm$ SD).

### Results

307 records were examined, 60 (19.5%) from Asian women. Asians were significantly younger ( $49.5 \pm 13.6$  years vs  $54.5 \pm 13.6$  years,  $p$  0.01). Fewer Asians had pure USI (21.7% vs 53%,  $p$  0.0001). More Asians had mixed incontinence (21.7% vs 6.9%,  $p$  0.001). The proportion of Asian and Caucasian women with DOA (either alone or as mixed incontinence) was 50% vs 12.4% ( $p$  0.0009). The 'strong desire to void' volume ( $332.5$  [225.3, 429.3] ml vs  $414$  [335, 503] ml,  $p$  0.0002) and cystometric capacity ( $280$  [224.8, 364.3] ml vs  $327$  [252.5, 427.2] ml,  $p$  0.03) were smaller in Asians. Asians also had a smaller residual urine volume (0 [0, 10] ml vs 5 [0, 30] ml,  $p$  0.02).

In women with DOA only, there were more unstable contractions in the Asians (5 [3, 9] vs 3 [2, 5],  $p$  0.009). The volume at which the first unstable contraction occurred was lower in Asians (57 [48.5, 119] ml vs 179 [92, 314] ml,  $p$  0.002). The maximum (50 [31.5, 58] cm H<sub>2</sub>O vs 32 [22, 42] cm H<sub>2</sub>O,  $p$  0.001) and average (34.4 [24.3, 41.9] cm H<sub>2</sub>O vs 25.3 [17.7, 34] cm H<sub>2</sub>O,  $p$  0.02) detrusor pressure of these contractions were higher in Asians.

### Interpretation of results

Our data show differences in prevalence of USI and DOA between Asian and Caucasian women. The incidence of pure USI was lower among Asians, similar to the finding comparing Caucasians with Africans<sup>2</sup>. The increased incidence of mixed incontinence in Asians has not been reported before and the differences in contraction amplitude, frequency and volume suggest that there are differences in detrusor muscle function, or in the functionality of the sphincter mechanism.

### Concluding message

The differences in the function of the detrusor in women with DOA suggest that there may be fundamental differences in bladder function or disease aetiology depending on ethnic origin and deserve further study. These findings may affect the efficacy of treatments for DOA.

### References

1. Duong TH, Korn AP. A comparison of urinary incontinence among African American, Asian, Hispanic, and white women. *Am J Obstet Gynecol* 2001;184:1083-6.
2. Bump RC. Racial comparisons and contrasts in urinary incontinence and pelvic organ prolapse. *Obstet Gynecol* 1993;81:421-5.

3. Nicoll A, Bassett K, Ulijasyek SJ. What's in a name? Accuracy of using surnames and fornames in ascribing Asian ethnic origin. *J Epidemiol Commun Hlth* 1986;40:3645-368.