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DIFFERENCES IN VOIDING DYNAMICS AND PROSTATE ANATOMY BETWEEN ENGLISH, ITALIAN AND JAPANESE PATIENTS WITH SYMPTOMATIC BENIGN PROSTATIC ENLARGEMENT.

#### Aims of the Study

Little is known about the differences in physiological parameters of bladder outlet obstruction and prostate anatomy between different populations. Following a previous retrospective analysis of Japanese and European patients performed in 1998, we designed a prospective study to establish a common database of patients with LUTS using homogeneous criteria to evaluate and classify patients referred to our departments.

#### Methods

Data from 1381 patients referred for LUTS were collected in three centres (England, Italy and Japan) from 1998 - 1999. All patients were investigated by IPSS, physical examination with DRE, and uroflowmetry; 77% of patients had data from transrectal sonography of the prostate and 76% from pressure-flow study. Analysis of the IPSS value, parameters of pressure-flow study and TRUS in patients from the 3 departments was carried out on the whole group and in different subsets defined by the presence or absence of bladder outlet obstruction and by prostate size.

#### Results

We believe that the threshold for entering patients into the dataset was broadly equivalent. In the group of patients with BOO as defined by an Abrams-Griffiths nomogram there were no significant differences in symptoms between Japanese and European patients. Obstructed patients had comparable values for prostate volume and detrusor contractility. Total prostate volume was greater in Italian and Japanese than English patients but a greater transition zone index was observed in the Japanese. The lower flow rate values recorded in Japanese patients was found to be dependent on lower detrusor contractility.

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Significant differences between Japanese and European patients were seen in unobstructed patients but the size of this subgroup (39 pts only from Japan.) leads us to be cautious about drawing any conclusions. Analysis of 149 patients with small prostates (<30 mls) showed some interesting differences between Japanese and European patients. IPSS values were found to be significantly different; with English patients being the least symptomatic. The lowest Qmax and PdetQmax values were found in the Japanese cohort, apparently as a result of reduced detrusor contractility.

Although no differences were observed in the value of the TZ index, Japanese prostates were smaller than the European ones because of a significantly shorter length of the prostate gland.

Table II: patients with prostate volume <30 mls.

	England	Japan	Italy	p≤
IPSS	13.2 ± 4.6	18.3 ± 10.6	18.0 ± 5.4	0.0001
Qmax (ml/s)	8.9 ± 3.4	5.3 ± 2.7	7.0 ± 3.0	0.0001
PdetQmax (cm H <sub>2</sub> O)	50.5 ± 19.5	49.4 ± 28.1	78.1 ± 35.5	0.0001
AG number	28.3 ± 24.5	35.9 ± 30.1	61.9 ± 39.7	0.0001
PIP (cm H <sub>2</sub> O)	106.1 ± 30.4	83.1 ± 33.5*	118.7 ± 40.9	0.0007
Prost. Vol.(ml)	21.2 ± 4.6	19.2 ± 6.3	22.3 ± 4.4	0.0626
TZ index	0.30 ± 0.1	0.33 ± 0.2	0.33 ± 1.4	0.4128
Prost. Length(mm)	38.5 ± 4.6	32.9 ± 4.8*	39.8 ± 5.8	0.0001
TZ length (mm)	25.5 ± 6.3	21.8 ± 8.2	28.3 ± 6.5	0.0019

\* significant (p≤0.05) difference between Japanese and European patients.

### Conclusions

This study provides interesting information as to differences in physiological and anatomical parameters of European and Japanese patients with LUTS and BPE. The obstructed patients from each centre were similar but significant differences exist in the non-obstructed patients and those with a smaller prostate. While there are inevitably problems in standardising the patient accrual for such a study, the information contained in this study must cast some doubt on the use of international multicentre studies of BPH treatments. Our study strongly supports establishing international population based studies of patients with LUTS.