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CORRELATION OF IPSS-STORAGE SCORE, OABSS AND USS IN PATIENTS WITH OAB AND HYPERSENSITIVE BLADDER – WHICH ONE IS THE BEST SCORE SYSTEM FOR ASSESSING SEVERITY OF OAB ?

Hypothesis / aims of study

Overactive bladder (OAB) is defined as a symptom syndrome of urinary urgency, with or without urgency incontinence, usually with urinary frequency and nocturia, in the absence of infection or other obvious pathological features. According to the definition, urgency is the core symptom of OAB and patients were classified as OAB-wet and OAB-dry based on their chief complain of having urgency frequency with and without UUI, respectively. In the clinical practice, patients might report a sensation of urge to void as urgency and were classified as OAB dry. Hypersensitive bladder (HSB) symptoms mean increased bladder sensation without occurrence of urgency. HSB and OAB are symptomatically overlapping and HSB might be included in OAB dry group. HSB, OAB-dry and OAB-wet stand for the variety of severity of OAB. The aim of this study is to evaluate the correlation of International Prostate Symptom Score (IPSS) -storage score, Overactive Bladder Symptom Score (OABSS) and the modified Indevus Urgency Severity Scale (USS) in patients with OAB and hypersensitive bladder.

Study design, materials and methods

We retrospectively reviewed charts of consecutive patients with OAB who visited the urologic clinics for treatment. All patients under wet a detailed clinical evaluation including history, physical examination, urinalysis, urine culture, uroflowmetry, postvoid residual (PVR) volume measurement and a 3-day voiding diary. Besides, all patients were also questioned using a validated Chinese IPSS with a QOL index, OABSS and USS. Patients were classified as OAB-wet and OAB-dry according to theirchief complaint of having urgency frequency with and without UUI, respectively. HSB was defined as functional capacity <350 mL and USS = 0 or 1. Continuous variables were represented as mean ± standard devation (SD) and categorical data were presented by number (n) and percentage (%). Statistical comparisons among the groups were tested using Spearman's correlation coefficient method and one-way analysis of variance (ANOVA) test with multiple comparisons. A *P* value of less than 0.05 was considered statistically significant. Receiver-operating characteristic (ROC) curve analysis was also performed to identify the valuable diagnostic tool.

Results

A total of 325 OAB patients including 99 female and 226 male were recruited. The subgroups of OAB were classified as a. HSB (n=31), b. OAB-dry (n=74), c. OAB-wet (n=220). One-way ANOVA analysis showed significant differences among subgroups of OAB evaluated by each scoring system (Table 1 and Fig. 1). When the subgroups evaluated by USS, P=0.019 for a vs b, P<0.001 for the other comparisons. In OABSS, p=0.842 for a vs b, p=0.086 for b vs c, p=0.026 for a vs c, and p<0.001 for other comparisons. With IPSSs, p=0.687 for a vs b, p= 0.069 for a vs c, p=0.456 for b vs c, and p<0.001 for other comparisons. Table 2 showed each scoring system has a significant high correlation with OAB subgroups (all P<0.001), Spearman's rho of USS, OABSS, IPSSs was 0.940, 0.618, 0.402, respectively. Fig. 2 showed the areas under ROC curve of each scoring systems in each subgroups of OAB.

Interpretation of results

All of the IPSS-storage score, OABSS and USS have good correlation with OAB subgroups. The grade of discrimination ability for classified the severity of OAB patients into HSB, OAB- dry and OAB-wet is USS > OABSS > IPSSs.

Concluding message

The simplest one, USS scale 0-4, has the highest correlation coefficient in classifing the OAB subgroups clearly.

Table 1. Comparisons of USS, OABSS and IPSSs scores among the OAB subgroups

OAB subtypes	n (%)	USS (score 0~4) mean±SD	P value	OABSS (score 0~15) mean±SD	P value	IPSS (score 0~15) mean±SD	P value
a. HSB	31 (9.5)	0.32±0.48		3.16±1.00		4.61±2.19	
b. OAB dry	74 (22.8)	2.57±0.53	<0.001	5.31±2.26	<0.001	6.32±2.74	<0.001
c. OAB wet	220 (67.7)	4.00±0.07		9.44±3.10		8.75±3.19	

Multiple comparisons:

When the OAB subtypes in USS, p<0.001 for all comparisons; when the OAB subtypes in OABSS, p=0.002 for a vs. b, and p<0.001 for other comparisons; when the OAB subtypes in IPSS, p=0.030 for a vs. b, and p<0.001 for other comparisons.

One-way ANOVA by linear contrast:

P value <0.001 for linear trend in OAB subtypes.

Table 2. Correlation of the OAB subgroups with USS, OABSS and IPSSs

OAB subtypes	USS (score 0~4)	OABSS (score 0~15)	IPSS (score 0~15)
Rho (**ρ**)	0.983	0.651	0.428
P value	<0.001	<0.001	<0.001

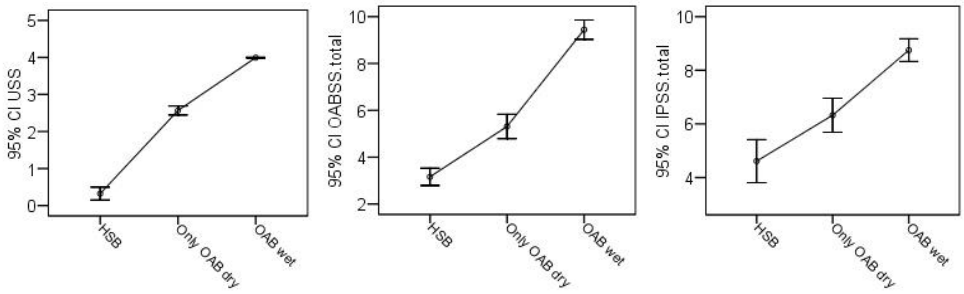

Fig 1a. USS Fig. 1b. OABSS Fig. 1c. IPSSs

Fig. 1. The distribution of scores of OAB subgroups in USS, OABSS and IPSSs.

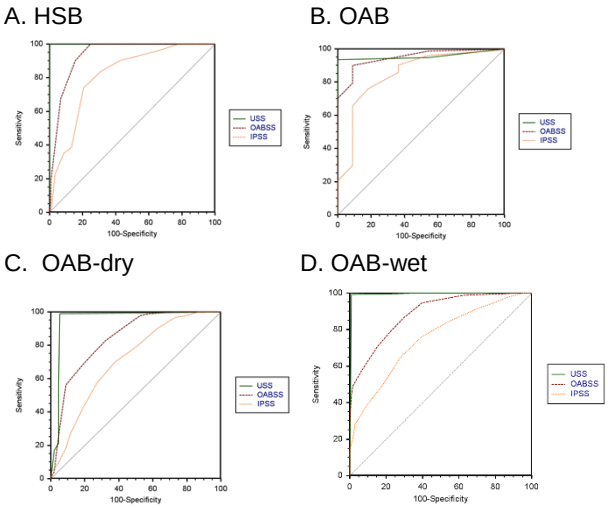

Fig. 2. Area under ROC curve for USS, OABSS and IPSSs in each OAB subgroup

Disclosures
Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Research Ethics Committee **Helsinki:** Yes **Informed Consent:** Yes