to urinate, always had a weak stream, repeated urination, dysuria and acute retention. These items were omitted from further analyses. Duplicate items were found for reduced stream, hesitancy and dribbling and were also dropped. 13 symptoms were entered into the final factor analysis, with 11 producing two clear factors with scores obtainable by simple addition:

(a) Voiding symptoms (ICS*male*VS): hesitancy, straining to continue, reduced stream, intermittency and incomplete emptying (loadings >0.49, alpha 0.76; minimum 0, maximum 20)

(b) Incontinence (ICS*male*IS): urge, stress, miscellaneous and nocturnal incontinence, urgency and post-micturition dribble (loadings >0.50, alpha 0.78; minimum 0, maximum 24)

The remaining items, frequency and nocturia, were highly problematic and sensitive to change, but did not load into either factor and have a weak correlation with each other (-0.21).

Internal validity of score: Missing data were minimal. ICS*male*VS and ICS*male*IS changed little in those randomised to CM. ICS*male*VS was able to detect significant improvements following laser therapy and TURP compared with CM ($p<0.0001$). ICS*male*IS was also able to detect these differences ($p<0.0001$), although to a slightly lesser degree. Correlations were highest between the ICS*male*VS and the I-PSS (0.68), and somewhat lower between ICS*male*IS and I-PSS (0.36) and ICS*male*VS and ICS*male*IS (0.24).

External validity of score: Again, ICS*male*VS was clearly able to distinguish between the treatment groups in the ICS-'BPH' study ($p<0.0001$). Those who received TURP exhibited greater improvements than those receiving miniminally invasive therapies, and these in turn showed greater improvements than those receiving drug therapies. Patients in the watchful waiting groups changed minimally. The pattern was similar for ICS*male*IS, but to a lesser degree ($p<0.0012$).

Frequency and nocturia: Individually and within a combined score, frequency and nocturia were able to indicate significant differences between the treatment groups. When included in the other scores, however, they reduced the sensitivity of the scores.

Conclusion

This work marks the completion of the development of the ICS*male* questionnaire. The final version (ICS*male*SF) is concise and consists of two simply scored sub-scales for voiding and incontinence (five and six items respectively), with the separate consideration of the symptoms frequency and nocturia. For completeness, the single item 'interference with life' may also be added from ICS*QoL* to allow the separate assessment of impact on everyday life. The final questionnaire is easy to complete, results in minimal missing data, produces valid and reliable data, and is responsive to change. In addition, it now provides a simple, flexible and clinically relevant tool for research and clinical practice. We hope that it will become the tool of choice for the comprehensive evaluation of men with LUTS.

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ANTAGONIST EFFECTS OF ALFUZOSIN ON CONCENTRATION-RESPONSE CURVES TO PHENYLEPHRINE AND NORADRENALINE IN HUMAN PROSTATIC ADENOMA.

The contractile response of human prostatic adenoma to α_1-adrenoceptor activation is mediated by the α_{1A} adrenoceptor subtype but possibly also by another subtype, named α_{1L} (1). Alfuzosin is widely used for the treatment of benign prostatic hyperplasia (BPH); however no *in vitro* studies on the antagonistic potency of Alfuzosin in human prostatic adenoma has been reported to date. Aim of Study: To determine the potency of alfuzosin on α_1-adrenoceptor mediating contractions of human isolated prostatic adenomas, using phenylephrine (PHE) and noradrenaline (Nad) as agonists. Methods: Human prostatic adenomas were obtained from patients affected by BPH undergoing transvesical adenomectomy at the Urological Surgery Department of the Institut

Mutualiste Montsouris, Paris. Immediately after surgery, human prostatic adenoma specimens were placed in chilled Krebs-Henseleit solution of the following composition (mM) : NaCl 114.0, $NaHCO_3$ 25.0, $CaCl_2$ 2.5, KCl 4.7, $MgSO_4$ 1.2, KH_2PO_4 1.2, glucose 11.7, ascorbic acid 1. This physiological solution was oxygenated with 95% O_2 / 5% CO_2. Experiments were done either the same day as surgery or approximately 16 or 40 hours after surgery using tissues stored at 4°C in the refrigerator. The prostatic adenomas, divided in pieces of approximately 10x4 mm, were mounted under 1.5g of tension in 5 ml glass organ baths containing the Krebs solution gassed (95% O_2/ 5% CO_2). When Nad was used as an agonist, desipramine (0.1 μM) and deoxycorticosterone (3μM) were added to the Krebs solution in order to block neuronal and extraneuronal uptake, respectively. Tissues responses were measured using isometric strain gauges connected to a polygraph and to a data acquisition system. After approximately 1 hour equilibration time, the viability of all preparations was tested by exposure to 100 μM Nad. After frequent washouts and a new equilibration period of 45-60 min, tissues were incubated for 60 min with alfuzosin 0.1-0.3-1 μM (only one concentration by strip) or with the Krebs solution (controls) then a PHE or Nad concentration-response curve (CRC) was obtained by cumulative additions in half-log unit concentrations increments.Individual PHE or Nad concentration-effect data were measured in g of tension and expressed as percentage of the initial contractile response to 100μM Nad taken as 100%. Individual CRC were fitted using the Allfit program (RS1), the midpoint location (EC_{50}) was calculated and expressed as the pD_2 value. The curves obtained following alfuzosin incubation were compared with PHE or Nad curves obtained in vehicle-treated strip from the same patient (Allfit program) and antagonist concentration-ratios (CR) were calculated at the EC_{50} level of PHE and Nad curves in the presence of each concentration of alfuzosin. pA_2 values were calculated by using the method described in (2) and a Schild plot was constructed. A statistical analysis (by RS1 software) was used to evaluate if slopes were not different from unity in order to calculate a pK_B value.Results: The selective α_1-adrenoceptor agonist, PHE (0.1-300 μM), produced concentration-dependent contractions of the human prostatic adenoma with a pD_2 value of 5.31±0.04 (n=17, 7 patients). The maximal effect was obtained at 100 μM (% Nad= 35.6±6.2). Alfuzosin, studied at 0.1 μM (n=7, 5 patients), at 0.3 μM (n=8, 6 patients) and 1 μM (n=8, 4 patients), shifted the PHE CRC to the right without statistically modifying Emax. values. pA_2 values were similar with the three alfuzosin concentrations and also between each patient. The Schild plot gave a pA_2 value of 7.96 (7.54-8.83; 95%confidence limits) with a slope value of 0.88 which is not significantly different from unity. The pK_B value calculated with the slope constrained to unity was 7.78. The non-selective α_1/α_2-adrenoceptor natural agonist, Nad (0.1-300 μM) produced concentration-dependent contractions of the human prostatic adenoma with a pD_2 value of 5.48±0.11 (n=9, 6 patients). The maximal effect was obtained at 100 μM (% Nad=66.5 ± 4.5). Alfuzosin studied at 0.1μM (n=9, 6 patients), at 0.3 μM (n=8, 5 patients) and 1 μM (n=9, 6 patients), shifted the Nad CRC to the right without statistically modifying the Emax. values. The Schild plot gave a pA_2 value of 7.40 (7.19-7.74; 95% confidence limits) with a slope value of 0.96 which is not significantly different from unity. The pK_B value calculated with the slope constrained to unity was 7.37. Conclusions: These results performed on human prostatic adenoma strips from a total of 13 patients demonstrates that alfuzosin, at concentrations compatible with

therapeutic plasma levels (3) is a potent competitive antagonist on the α_{1A} /α_{1L} adrenoceptor-mediated contractile responses in human prostatic adenoma.

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Title (type in CAPITAL LETTERS, leave one blank line before the text):

EFFECTS OF BLADDER CATHETERIZATION AND EMPTYING ON BLOOD FLOW AFTER OUTLET OBSTRUCTION

Aims of Study: Previous studies have shown that catheterization and drainage of the urinary bladder results in a significant nitric oxide-induced increase of blood flow to the bladder. It was also shown that long term obstruction causes a significant decrease in blood flow to the bladder. The purpose of this study was to determine the effects of catheterization and drainage on blood flow after 4 weeks of partial outlet obstruction.

Methods: 15 New Zealand White rabbits received a partial outlet obstruction by standard methods. After 4 weeks the rabbits were anaesthetized and blood flow to the bladder muscle and mucosa were determined by a standardized fluorescent microsphere technique. After transurethral catheterization and complete drainage of the bladder the blood flow was determined again. The same procedure was performed in 5 unobstructed control animals. The bladders were assingned to groups based on bladder weight and were named compensated (<5.1g), intermediately compensated (5.1.-15g) and decompensated (>15.1g).

Results: 4 weeks of partial bladder outlet obstruction caused a significant decrease of blood flow to the bladder muscle (without changes in the blood flow to mucosa) and a increases of bladder weight and residual urine. After drainage of the bladder the blood flow increased 6 fold in the obstructed group and 2.5 fold in the control animals (Figure). Within the obstructed animal group the increase was highest in the intermediate group. The severely decompensated bladders (weight > 15g) showed a limited ability to increase blood flow after drainage.