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**Abstract Reproduction Form B-1**

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Title (type in  
CAPITAL  
LETTERS)**DOES CONTRAST MEDIUM AFFECT THE RESULTS OF URODYNAMICS?**

**Aims of Study:** Different filling media are used in urodynamics (UDS) according to the preferences of the institution and the diagnostic information sought. The most commonly used media are saline and radiographic contrast. It is assumed that quantitative data obtained using contrast in video-urodynamics are equivalent to those obtained using saline in ordinary filling cystometry and pressure-flow studies. As contrast is more dense, more alkaline, and more viscous than saline we felt that this assumption should be tested. We are aware of only one small study of the effect of contrast on pressure-flow studies [1], which suggested no significant difference in the results using different filling media. However, only 11 patients were included in the study, and the order of filling was not varied, which may well have biased the results. This study was therefore designed to carefully re-evaluate the effect of contrast on urodynamic results using a larger group of patients.

**Methods:** Men referred for video-urodynamics were invited to take part and gave written consent. UDS were performed twice, using saline for one fill and void, and Urografin 150 for the other, in a random order. The flow rate was automatically corrected to take account of the greater density of contrast. Repeated fills were separated by a mean interval of 12 minutes. Urodynamic traces were analysed for multiple variables during filling such as volume at first desire to void (FDTV), and the presence of detrusor instability. They were also analysed for various parameters during voiding such as voided volume, maximum flow ( $Q_{max}$ ), detrusor pressure at maximum flow ( $p_{det.Q_{max}}$ ) and post-void residual volume (PVR). The differences between paired values of these parameters from consecutive tests were analysed using the paired 't' test.

**Results:** Nineteen patients have been studied so far. Ten were filled with radiographic contrast first, nine with saline first. Fourteen patients (74%) showed detrusor instability (DI) with contrast, 8 patients (42%) showed DI with saline. DI was also commoner on the first fill (74%) than on the second (42%). There was no difference in volume at FDTV between contrast and saline (186 ml with contrast vs 190 with saline). Volume at FDTV was lower on the first fill than on the second fill (mean 176 ml vs 200 ml) but this difference was not significant.

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## Abstract Reproduction Form B-2

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Comparing pressure-flow studies with saline to those using contrast, voiding pressures tended to be slightly higher with contrast, but there were no statistically significant differences in any of the variables examined (values shown are means;  $p > 0.1$  for all variables).

Variable	Cap (ml)	Pdet.open (cmH <sub>2</sub> O)	Pdetmax (cmH <sub>2</sub> O)	PdetQmax (cmH <sub>2</sub> O)	Pdet.min void (cmH <sub>2</sub> O)	Qmax (ml/s)	Vol (ml)	PVR (ml)
With Saline 34	278		67.1	77.6	69.5	37.2	11.4	244
With Contrast	286	70.8	81.8	67.1	39.7	12.1	249	37

Cap : cystometric capacity. Vol : volume voided. PVR : post-void residual.

Three patients (16% changed class of obstruction on the Abrams-Griffiths nomogram between fills.

**Conclusions:** These results support the assumption that using contrast rather than saline as the filling medium during urodynamics does not significantly alter the results, despite the physical differences between these filling media. It is possible that a small but significant effect will become apparent with a larger number of recruits. We are therefore continuing to recruit patients to confirm these preliminary findings.

**References:**

1 'Urodynamic implications of the differences in the viscosity of saline, urine and Urografin'.. Proceedings of the 9<sup>th</sup> Annual Meeting of the International Continence Society, Rome 1979, pp 211- 215.

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