

## THE EFFECT OF SPINAL ANAESTHESIA ON URETHRAL FUNCTION

### Hypothesis / aims of study

To measure the effect of spinal anaesthesia on urethral function (using urethral retro-resistance pressure, URP), cough pressures and the degree of urinary leakage during coughing. The null hypothesis for this study was that coughing under a spinal anaesthetic is the same as coughing without an anaesthetic, and that spinal anaesthesia does not affect urethral function and the tendency to leak.

### Study design, materials and methods

32 women with urodynamic stress incontinence underwent URP and cough pressure measurements prior to and after insertion of a spinal anaesthetic over an 18 month period. The degree of leak was assessed using a 4 point scale before and after a spinal anaesthetic. Significance testing was applied to assess any differences in each parameter before and after introduction of a spinal anaesthetic.

### Results

URP values fell by 28% after the spinal ( $p=0.0003$ ). There was no statistically significant fall in the cough pressures ( $p=0.06$ ). The degree of urinary leakage increased after placement of the spinal anaesthetic ( $p=0.005$ ).

### Interpretation of results

Under spinal anaesthesia there is a fall in urethral resistance but no significant fall in cough pressures. These changes result in an increase in the tendency to leak.

### Concluding message

There may be safety benefits with spinal anaesthesia as compared to general anaesthesia. However there is a poor association between the degree of leakage after a spinal anaesthetic compared to a non-anaesthetised state. The cough test under spinal does not mimic coughing without a spinal.

### References

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**HUMAN SUBJECTS:** This study was approved by the Trust ethics committee and followed the Declaration of Helsinki Informed consent was obtained from the patients.