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A NON-INVASIVE MEASUREMENT OF ABDOMINAL PRESSURE FOR URODYNAMIC STUDY

Hypothesis / aims of study

Urodynamics is commonly used in the diagnosis of lower urinary tract dysfunction. Catheters placed in the rectum, vagina, or stoma measure abdominal pressures (P_{abd}); however, some patients may have irritation or discomfort with the use of invasive catheters. Our study, investigates the use of lung generated pressure (P_{Lung}) as a surrogate for abdominal pressure (P_{abd}). We hypothesize there is a correlation between P_{Lung} and P_{abd} measurements during urodynamic study.

Study design, materials and methods

Female subjects attending our urodynamic clinic were recruited for the study. Subjects underwent conventional urodynamic evaluation according to good urodynamic practice. P_{Lung} measurements were recorded with a pressure transducer connected to a mouth piece. Subjects exhaled during various bladder filling periods (100, 200, 300 mL) and P_{Lung} and P_{abd} measurements were recorded. Pearson correlation and student t-test were used for comparative analysis.

Results

Twenty five female subjects were recruited for our study. Mean age of subjects was 50 years old. Pre-test diagnosis of the subjects included incontinence and overactive bladder. Mean P_{abd} was 86.2 cm H20 (+/- 44 cm H20), and mean P_{Lung} was 136.7 cm H20 (+/- 58.9 cm H20).

Interpretation of results

A Pearson correlation of $R=0.48$ was calculated ($p=0.0019$), suggesting a significant correlation between P_{Lung} and P_{abd} measurements.

Concluding message

Urodynamics is an invasive study that could lead to non-compliance with patients. The non-invasive, lung measurements taken during this study correlates well with the invasive P_{abd} recorded with a catheter. P_{Lung} is a feasible surrogate for P_{abd} and may improve discomfort felt during urodynamics

Disclosures

Funding: Nothing to declare **Clinical Trial:** No **Subjects:** HUMAN **Ethics Committee:** Clinical Ethics Consult Service at the University Of Illinois Hospital & Health Sciences System (UI Hospital) **Helsinki:** Yes **Informed Consent:** Yes