

THE EFFECT OF AGING IN AN ANIMAL MODEL OF STRESS URINARY INCONTINENCE.

Hypothesis / aims of study

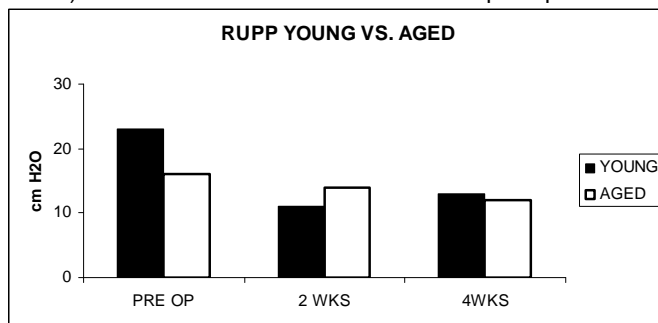
Urinary incontinence affects approximately 13 million Americans. The prevalence is variable between 21 to 52 % and it increases with increasing age. The high prevalence of this condition in the aging population suggests that there are likely changes related to the aging process that might influence the development of SUI. A number of animal models have been developed to study SUI. To our knowledge, no model has systematically evaluated the effects of aging. We propose to evaluate the effects of aging in an established model of SUI studying an animal model well described in geriatric research.

Study design, materials and methods

Fisher (F344) rats were divided into two groups: (1) Young 3 month old rats, and (2) Aged 24 month old rats. These animals are equivalent to 60 y/o humans. All animals underwent transabdominal urethrolisis as previously described. All animals underwent cystometry and evaluation of urethral resistance by abdominal leak point pressure (ALPP) and retrograde urethral perfusion pressure (RUPP) pre-operatively and 2, 4, and 8 weeks postoperatively.

Results

Cystometry revealed similar baseline bladder capacity and for both groups (1.19 in both groups, $P > 0.05$). Aged rats had lower ALPP and RUPP at baseline when compared to young animals (22 vs. 20 cm H₂O and 22 vs. 16 cm H₂O for young and old rats, respectively). After urethrolisis, both values decreased significantly but similarly in both groups ($p < 0.05$). This decrease was maintained at all postoperative time points.



Interpretation of results

Aged animals have similar bladder dynamics than young animals with similar bladder capacity and voiding pressures. Increased detrusor overactivity was not observed. Aged animals appear to have lower baseline urethral resistance when compared to young animals.

Concluding message

Although this animal model of decreased urethral resistance achieves durable low ALPP and RUPP in both groups, the lower baseline difference did not translate to measurable differences between both groups after urethrolisis. Larger studies need to be done to confirm these results and to evaluate the mechanism by which aging causes lower urethra resistance.

References

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ANIMAL SUBJECTS: This study followed the guidelines for care and use of laboratory animals and was approved by ARC Protocol Nr 2006-046-01 University of California Los Angeles