Effects of aging in the prostate

Teresa Liu, Ph.D.
K Scholar
BPH/LUTS is multifactorial disease

Adapted from Liu et al, 2019
Hallmarks of Aging

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Cellular senescence
Mitochondrial dysfunction
Complex I dysfunction

Ryan J. Mailloux Redox Biol 2015; 4:381-98

Hypothesis

• Accumulation of cellular senescence and mitochondrial dysfunction in the prostate results in an increase in prostatic fibrosis leading to an increase in lower urinary tract dysfunction.
Conclusions

- Fibrosis increases with age in mice and men
- Cellular senescence increases with BPH/LUTD
- Mitochondrial dysfunction corresponds to age and disease
- Pirfenidone, an antifibrotic and a senolytics, can reverse fibrosis and mitochondrial dysfunction
Future directions

• Further examine the effect of pirfenidone on mitochondrial dysfunction and cellular senescence.
• Examine the effect of drugs that specifically bypass complex I to reverse mitochondrial dysfunction.
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