INTRODUCTION

- Inhibitors of phosphodiesterase type 5 (PDE5) such as sildenafil and tadalafil relax smooth muscle cells (SMCs) and have emerged as alternative treatment options for benign prostate hyperplasia (BPH).
- Classical treatment of BPH with α1-adrenergic blockers like tamsulosin often results in side effects like ejaculatory disorders.
- The prostate (Fig.1A) consists of single glands (Fig.1,A, I) which produce the prostatic fluid. Excretory ducts (Fig.1,A, II) transport the fluid to the urethra (Fig.1,A, III) during the emission phase of ejaculation.
- Most recently, we found spontaneous contractions in isolated prostatic glands (Fig.1B) which can be inhibited by the PDE5 inhibitors sildenafil and tadalafil (Kügler et al., FASEB J. 2017).
- Comparison of different drug treatments was also performed for seminal vesicles (Fig.1C) and the distal part of the epididymis (Fig.1D).

AIM

To elucidate and visualize effects of PDE5 inhibitors on contractility of prostatic ducts, seminal vesicles and cauda epididymis in comparison to α1-adrenergic blockers with its known ejaculation disorders.

RESULTS

Figure 2: Area changes in contractility studies in prostate ducts

- Figure 3: Contraction frequency of epididymids

- Figure 4: Weight changes in contractility studies in seminal vesicles

- Figure 5: Area changes in contractility studies in seminal vesicles

CONCLUSION

Data suggest that PDE5 inhibitors do not disturb expulsion of prostate and seminal vesicle secretions during ejaculation and contribute to explain adverse effects on ejaculation observed with α1-adrenergic antagonists.

REFERENCES