

## Press release

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### Basic information

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Department of: Clinical Medicine

Main supervisor: L. Henning Olsen

Title of dissertation: Bladder remodelling after bladder outlet obstruction

Date for defence: 28.02.2020 at (time of day): 14:00-16:00 Place: Auditorium B, Aarhus Universitetshospital, Palle Juul-Jensens Blvd. 99, indgang G6

Press release (Danish)

### Forandringer i blærevæggen efter akut total blære obstruktion

Ændring af urinblærens kapacitet kan have mange årsager. Der findes medfødte lidelser såsom klapdannelse i urinrøret hos drenge, hvilket medfører udtalt blærefibrose hvor såvel de ændrede reservoirforhold som obstruktionen påvirker nyrefunktionen. Ændrede reservoirforhold ses også hos patienter med neurogene lidelser og hos patienter, der har smertefulde blærer eventuelt induceret af ketaminafhængighed. Fælles for alle disse tilstande er, at de er forbundet med fibrotiske forandringer i blærevæggen. Disse er en følge af stræk og ændret gennemblødning. Hvad der sker i den akutte fase, hvorvidt der allerede inden for kort tid optræder fibrotiske forandringer og ændring af reservoirfunktion er fortsat et emne for nærmere udredning. Yderligere er der mulighed for, at der kunne være et forskelligt reaktionsmønster som skyldtes kønsforskelle.

Et nyt ph.d.-projekt fra Aarhus Universitet, Health, har undersøgt blærevæggens reaktion på 24 timers total infravesical obstruktion henholdsvis på han og hunmus. Yderligere ønskede vi at udforske hvilke ændringer der måtte optræde efter, at man havde ophævet obstruktionen også om de skulle være forskelle på restitutionen hos han- og hunmus. Endelig har det været sigtet at udforske hvilke ændringer man eventuelt kunne registrere i nyrer udsat for 24 timers akut total infravesikal obstruktion og igen om der kunne tænkes at være kønsforskelle.

Projektet er gennemført af Yutao Lu fra Institut for Klinisk Medicin, Aarhus Univeritetshospital, der forsvarer det d. 28/02.

Forsvaret af ph.d.-projektet er offentligt og finder sted den 28/02 kl. 14.00 i auditorium B, Aarhus Universitet, Palle Juul-Jensens Blvd. 99, indgang G6, 8200 Aarhus N. Titlen på projektet er "Bladder remodelling after bladder outlet obstruction". Yderligere oplysninger: Ph.d.-studerende Yutao Lu, e-mail: [ytlu@clin.au.dk](mailto:ytlu@clin.au.dk), tlf. 91833710.

Bedømmelsesudvalg:  
Christopher Fry, Professor,  
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Palle Osther, Professor,  
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Press release (English)

### Bladder remodelling after bladder outlet obstruction

Bladder fibrosis is the consequence following several lower urinary pathologies, including bladder outlet obstruction (BOO), such as congenital posterior urethral valves, neurogenic bladder especially with spastic external sphincter, or other conditions such as ketamine-related cystitis and ageing. Acute total BOO occurs secondary to infravesical obstruction in older men or peripartum women. Bladder fibrosis is found under both acute and chronic BOO, while the understanding of the consequences of acute BOO is limited. It calls for investigations to delineate the bladder remodelling in response to acute BOO, to explore whether sex differences and gender differences can be revealed. In addition to these open questions, it is not fully elucidated how the onset of acute bladder fibrosis may react to the relief of obstruction and to what extent the kidneys are affected during an acute transient total obstruction.

The primary aim of the PhD project was to explore whether early onset of bladder fibrosis can be detected after acute BOO, whether acute BOO induced apparent kidney injury, and how bladder tissue remodels after relief of acute BOO, and last but not at least, whether the possible changes differed between genders.

The project was carried out by Yutao Lu, who is defending his dissertation on 28/02.

The defence is public and takes place on 28/02 at Auditorium B, Aarhus University Hospital, Palle Juul-Jensens Blvd. 99 entrance G6, 8200 Aarhus N. The title of the project is Bladder remodelling after bladder outlet obstruction. For more information, please contact PhD student Yutao Lu, email: ytlu@clin.au.dk, Phone +45 9187 3710.

Assessment committee:  
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