Is absorption of irrigation fluid a problem in Thulium laser vaporization of the prostate? A prospective investigation using the expired breath ethanol test

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BACKGROUND
Benign prostatic hyperplasia (BPH) is a prevalent entity in elderly men. If medical treatment fails, monopolar transurethral resection of the prostate (TUR-P) is still considered as the standard treatment. The proportion of high-risk patients with cardiac comorbidities increases and TUR-P goes along with a relevant perioperative risk. Especially large volume influx of irrigation fluid and transurethral resection syndrome (TUR syndrome) represent serious threats to these patients. Using isotonic saline as irrigation fluid like in transurethral laser vaporization (TUV-P), TUR syndrome can be prevented. However, no prospective trial has ever assessed occurrence or extent of irrigation fluid absorption in Thulium Laser TUV-P.

METHODS/DESIGN
This is a single-center prospective trial, investigating, if absorption of irrigation fluid occurs during Thulium Laser TUV-P by expired breath ethanol test. The expired breath ethanol technique is an established method of investigating intraoperative absorption of irrigation fluid: A tracer amount of ethanol is added to the irrigation fluid and the absorption of irrigation fluid can be calculated by measuring the expiratory ethanol concentrations of the patient with an alcohol breathalyzer. Fifty consecutive patients undergoing TUV-P at our tertiary referral center are included into the trial. Absorption volume of irrigation fluid during Thulium Laser TUV-P is defined as primary endpoint. Pre- to postoperative changes in bladder diaries, biochemical and hematological laboratory findings, duration of operation and standardized questionnaires are assessed as secondary outcome measures.

DISCUSSION
The aim of this study is to assess the safety of Thulium Laser TUV-P in regard to absorption of irrigation fluid.
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