

Investigation of flow and heat transfer during TURIS process via 2D CFD simulation

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Abstract – Transurethral resection in saline (TURIS) is a urological surgical technique that is now used as a gold standard for the treatment of benign prostate hyperplasia (BPH) to cut the cell tissue. The core of this study is the flow field and the temperature distribution in the region of the operation. Based on the modification of the geometry and the boundary conditions of the previous work, and using ANSYS FLUENT, a new 2D transient CFD simulation has been performed. The simulation results of flow field are in good agreement with the results provided by company Olympus. The results of the simulation indicate that the possible heat injury of the remaining tissue caused by surgery is minimal. In addition, a sensitivity test of effects of different electrode active action periods on temperature distribution has been analyzed.