

PROSPECTIVE RANDOMIZED STUDY COMPARING MONOPOLAR WITH BIPOLAR TRANSURETHRAL RESECTION OF PROSTATE IN BENIGN PROSTATIC OBSTRUCTION: LONG TERM OUTCOMES

Hypothesis / aims of study

Monopolar transurethral resection of the prostate (TURP) is the gold standard surgical treatment for bothersome moderate to severe lower urinary tract symptoms (LUTS) secondary to benign prostate obstruction. The aim of the study is to compare monopolar vs. bipolar TURP focusing on operative and functional outcomes, and evaluating complications with a long term follow-up.

Study design, materials and methods

From January 2007 to July 2014 a total of 497 patients were randomized and prospectively scheduled to undergo bipolar (251) or monopolar (246) TURP. International prostate symptom score (IPSS), IPSS-Quality of life (QoL), post-void residual and maximum flow rate were assessed preoperatively and postoperatively at 3, 12, 24 and 36 months. Operative time, length of catheterization and hospitalization were all recorded. Complications were classified and reported.

Results

All patients completed the 36 months follow-up visit. Perioperative results showed no statistical significance between the two groups in terms of catheterization days, post-void residual, IPSS, IPSS-QoL score. The hospitalization length was found statistically significant in favor of the bipolar group. The 3, 12, 24 and 36 months follow up showed significant and equal improvements in LUTS related to BPO in the 2 treatment groups. Regarding TURP complications, significant differences were observed in relation to urethral strictures, blood transfusion and TUR syndrome in favor of the bipolar group.

Interpretation of results

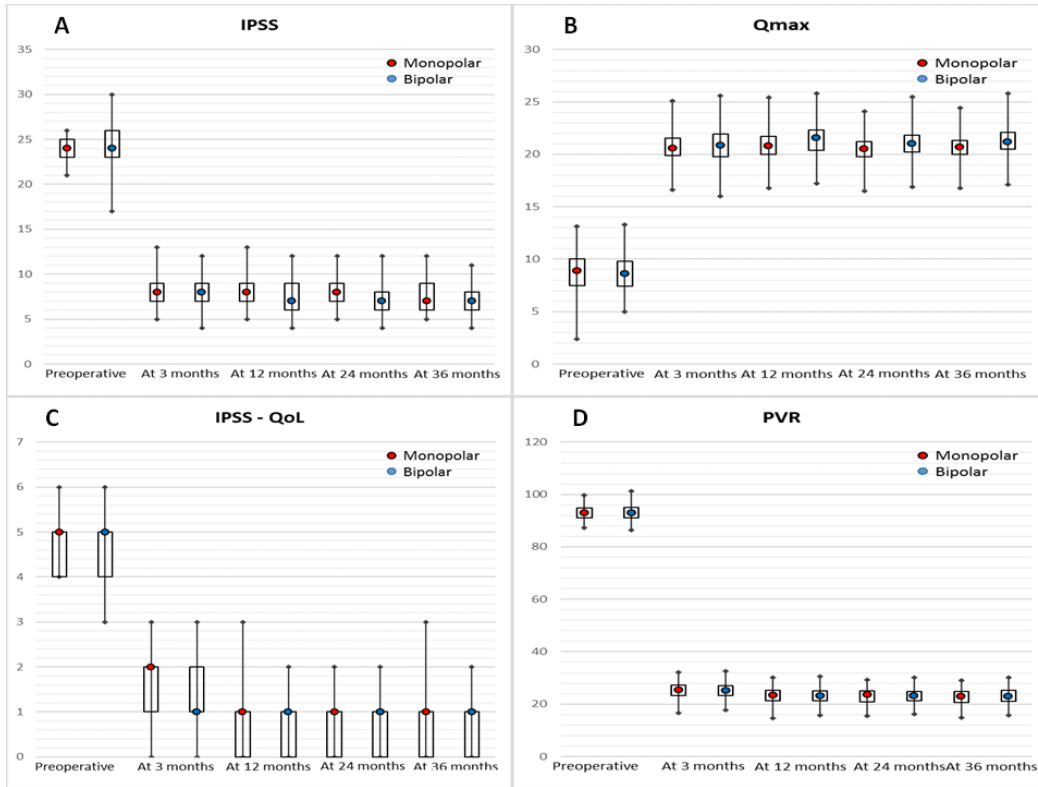
Several technical modifications have been developed in an effort to improve the safety profile and surpass the monopolar TURP, including the use of bipolar energy technology. The principal advantage of bipolar technology is avoiding dilution hyponatremia with the use of isotonic irrigation, therefore reducing the risk of TUR syndrome.

Results from randomized clinical trials (RCT)-based meta-analysis concluded that B-TURP is preferable due to a more favourable safety profile defined by less bleeding (lower blood transfusion and lower clot retention rates), no instance of TUR syndrome, shorter catheterization with a significant lower hospitalization length. B-TURP can coagulate small venous bleeding providing a clearer image during prostate resection in comparison to M-TURP, therefore leading to a decrease in operation time.

The results of our study showed a statistical difference between the 2 groups in favor of the bipolar group in terms of blood transfusion rates, and/or hematuria requiring intervention as well as in days of catheterization (even though these last two data were not significant). The drop in haemoglobin level was significantly lower in B-TURP when compared with M-TURP group. Accordingly, this study did demonstrate a valuable benefit from B-TURP with regard to bleeding complications.

Concluding message

Monopolar and bipolar TURP are both safe and effective procedures for surgical treatment of BPH. We found significant differences in terms of mean serum sodium, haemoglobin drop, and length of hospitalization days that were all in favor of the bipolar group. Regarding TURP complications, significant differences were observed in relation to urethral strictures, blood transfusions, and TUR syndrome in favor of the bipolar group. It has to be highlighted that the risk of TUR syndrome is totally prevented by the use of bipolar energy device. Bipolar TURP in our prospective study reported the same functional efficacy of M-TURP, with a significant reduction of related morbidities (TUR syndrome, blood transfusions rate, and urethral strictures).



References

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Disclosures

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