

A Cost-Effectiveness Analysis Comparing the Baylis Medical RF Needle to the Conventional Brockenbrough Needle for Transseptal Punctures

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INTRODUCTION

- ▶ Atrial fibrillation catheter ablation procedures commonly require transseptal puncture (TSP), which can be performed with a Brockenbrough (BRK) needle or with the Baylis Medical radiofrequency (RF) NRG® Transseptal Needle. While previous studies have shown that use of the Baylis Medical RF needle may be more successful and faster compared to conventional needles, some questions about cost still remain as physicians consider more routine use.
- ▶ The objective of the current study was to perform a cost-effectiveness analysis comparing the BRK needle and the Baylis Medical RF needle, taking into account differences in clinical outcomes previously reported in peer-reviewed literature.

METHODS

- ▶ The complication rates, success rates, and procedural times associated with use of each needle type were extracted from the peer-reviewed medical literature.
- ▶ The costs of procedures, complications and equipment were extracted from the Healthcare Cost and Utilization Project (HCUP), Medicare, and MarketScan® data sources.
- ▶ The incremental cost-effectiveness ratio (ICER) was determined using incremental cost for each additional successful puncture in a patient that remained alive at 30 days as the main outcome.

RESULTS

- ▶ The Baylis Medical RF NRG® Transseptal Needle dominated the BRK needle: the RF needle was associated with lower costs and higher effectiveness.
- ▶ The cost associated with use of the Baylis Medical RF needle at 30 days was \$35 less than the BRK needle (\$21,113 vs \$21,148), when accounting for procedural and complication costs.
- ▶ The overall effectiveness of the Baylis Medical RF needle vs BRK needle was 99.79% and 98.96%, respectively.
- ▶ Sensitivity analyses indicate that the Baylis Medical RF needle remains dominant unless the cost increases by more than 6.94%, successful puncture rates drop below 98.99%, or 30-day complication rates increase beyond 0.49%.

CONCLUSIONS

- ▶ The Baylis Medical RF NRG® Transseptal Needle is less costly and more effective than the BRK needle when all costs are accounted for, despite a higher immediate equipment cost.