A Systematic Review of Level I Evidence in the Treatment of Uterine Fibroids

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Purpose

- To systematically review randomized controlled trial data to compare the efficacy of uterine artery embolization (UAE), high-intensity focused ultrasound (HIFU), hysterectomy, and medical therapy in the management of symptomatic uterine fibroids

Methods

- Systematic review was performed of clinical literature to identify Level I evidence that compares treatment modalities in the management of symptomatic fibroids
- UAE, HIFU, hysterectomy, and medical therapy were assessed
- Five-year results from the REST trial and ten-year results from the EMMY trial comparing clinical outcomes between hysterectomy and UAE were evaluated[1-2]
- One network meta-analysis consisting of 47 randomized controlled trials assessing the efficacy of medical therapy in the management of uterine fibroids was evaluated[3]
- One randomized controlled trial comparing HIFU and UAE was reviewed[4]
- Network meta-analysis could not be performed because each study independently assessed different primary endpoints[4]
- Treatment modalities were assessed on the basis of symptom relief, quality of life, need for re-treatment, the urogenital distress inventory (UDI), the defecation distress inventory (DDI), and recovery time[1-4]

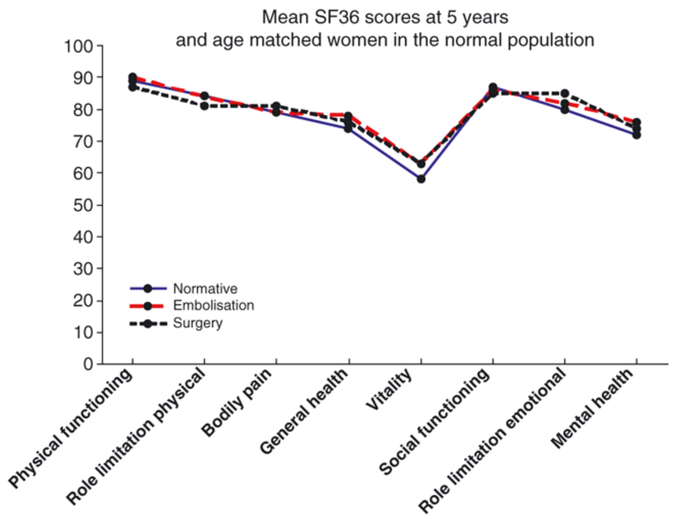

Figure 1 REST trial Mean Short Form (SF)-36 scores at 5 years post-intervention (hysterectomy vs. UAE) for age-matched women in the normal population[1]

Results

- The REST trial demonstrated that when comparing between UAE and hysterectomy treatment groups at 5-years post-procedure, there was no difference when comparing quality of life, complications, or adverse events[1]
  - Higher need for re-intervention in the UAE group (32%) versus the control group (4%)[1]
- The EMMY trial demonstrated that when comparing between UAE and hysterectomy treatment groups at 10-years post-procedure, that there was no difference between quality of life, satisfaction, urogenital distress, or defecation distress[2]
  - 35% of the initial UAE group required hysterectomy within 10-years post-procedure[2]
- The network meta-analysis demonstrates that no evidence exists to support medical treatment to replace procedural intervention[3]
- The randomized control trial and comprehensive cohort analysis comparing HIFU and UAE at 6-weeks post-procedure illustrated no difference in symptom resolution, incidence of adverse events, recovery time, or post-operative opioid use[4]

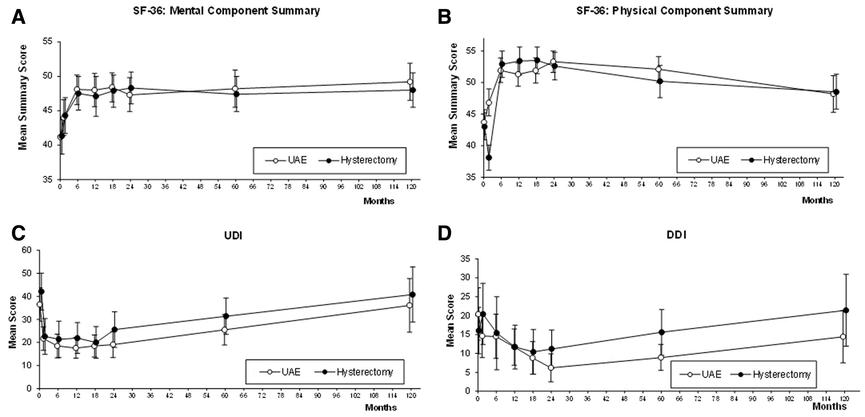

Figure 2 EMMY trial ten-year follow-up data for mental and physical health & quality of life scored by Short Form (SF)-36; high mental and physical component summaries indicate better functioning; high UDI and DDI scores indicate worse functioning[2]

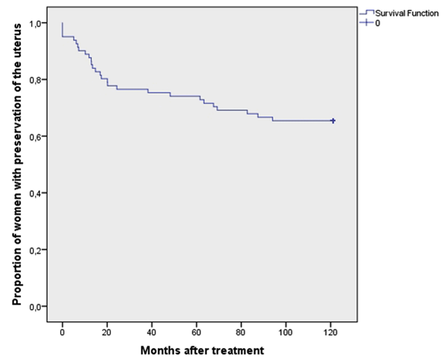

Figure 3 EMMY trial Kaplan Meier Curve for proportional hysterectomy-free survival following UAE[2]

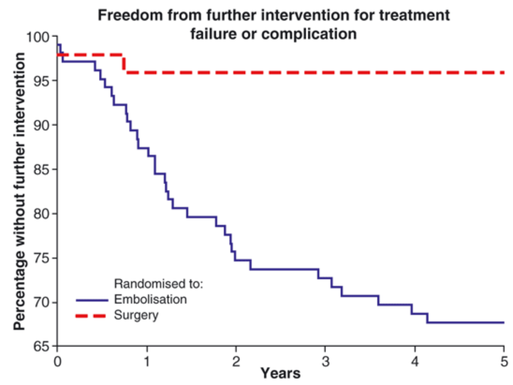

Figure 4 REST trial Kaplan Meier Curve showing freedom from further intervention for treatment failure or complications[1]

Conclusion

- Endovascular therapy for symptomatic uterine fibroids with UAE resulted in equivalent symptomatic relief, complications, and risk for adverse events when compared with hysterectomy and HIFU[1-2]
- UAE possesses a higher need for post-treatment re-intervention[1-2]
- UAE is a fertility-preserving solution with shorter procedure time and shorter post-procedural recovery[1-2,4]
- Insufficient long-term follow-up randomized controlled evidence to currently support HIFU over UAE and hysterectomy[4]
- No evidence to support medical intervention alone[3]

References

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