SHORT AND LONG TERM DURABILITY OUTCOMES FOR FEMALE STRESS URINARY INCONTINENCE: A SYSTEMATIC REVIEW AND META ANALYSIS OF POLYDIMETHYLSILOXANE INJECTION

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Introduction and Objectives:

Stress urinary incontinence (SUI) is a debilitating condition affecting millions of women worldwide. There are several treatment options for SUI ranging from behavior modification to surgical repair. Urethral bulking agents (UBA) have been widely used with minimal invasiveness, however long term durability varies between products, as resorption, allergic reactions, and migration can occur in some UBAs. The objective of this study is to review the scientific literature for safety and efficacy of the urethral bulking agent (UBA) Polydimethylsiloxane (Macroplastique) in the treatment of adult females diagnosed with SUI due to intrinsic sphincter deficiency (ISD).

Methods:

Ovid MEDLINE, PubMed and the Cochrane Library were used to conduct a systematic review of studies from 1990 to 2010, using PRISMA guidelines. Articles in the meta analysis included only those studies from randomized control trials, prospective, observational and cohort studies. Publications with the same cohort sample were excluded. Eight-two publications were retrieved from the searches with 19 patient cohorts from 20 published articles used in this systematic review.

Random-effects models were used to estimate the improvement and cure rates following treatment with Macroplastique at three follow-up periods, shown in the charts to the right: Short-term Improvement and Cure Rate (<6 months), Mid-term Improvement and Cure Rate (6-18 months), and Long-term Improvement and Cure Rate (>18 months). Meta-regression assessed the effect of reinjection on successful treatment outcomes. Adverse event rates were aggregated and reported.

Results:

A total of 817 patients from 19 cohorts were analyzed. Improvement rates were 74% (67–81%) in the short-term, 71% (58–83%) in the mid-term, and 64% (57–71%) long-term. Cure rates (dry) were 45% (34–56%), 38% (27–49%), and 38% (28–48%) over the same respective follow-up periods. Samples with higher reinjection rates had greater improvement in SUI symptoms across all time periods, but cure rates were unaffected. No serious adverse events were reported.

Conclusion:

Results of this quantitative review support Macroplastique as a durable and safe treatment option for the improvement of female SUI symptoms. Meta-analytic evidence suggests that among those with initial success, long-term therapeutic benefit is frequently maintained with some patients requiring a "booster" injection.

Short-term Improvement and Cure Rate (<6 months)

Mid-term Improvement and Cure Rate (6-18 months)

Long-term Improvement and Cure Rate (>18 months)