

## **Tolerability and Efficacy of Newly Developed Penile Injection of Cross-Linked Dextran and Polymethylmethacrylate Mixture on Penile Enhancement: One-Year Follow-up**

**Introduction and Objective:** Cross-linked dextran and polymethylmethacrylate (PMMA) mixture (Lipen-10®) is a newly developed tissue filler for soft tissue augmentation. The purpose of this study was to evaluate efficacy and tolerability of cross-linked dextran and PMMA mixture on penile enhancement.

**Materials and Methods:** A total of 20 adult males who wanted penile enhancement were enrolled at two centers. Mean patient age was 44.4 years (20-70). Lipen-10® was injected into the subcutaneous tissue of the penile shaft, between Dartos fascia and Buck's fascia, using the fanning technique. The penile girth and length were measured with a caliper in the flaccid state, before and 3, 6 and 12 months after the injection. Any adverse events were also recorded during the trial.

**Results:** Mean injected volume of Lipen-10® was 23.73 ml (range 17 to 30 ml). The circumference increased by 3.7cm (50.5 %,  $p<0.0001$ ) at penile base, 4.2 cm (59.2 %,  $p<0.001$ ) at mid-shaft, and  $3.8\pm1.0$  cm (53.8 %,  $p<0.0001$ ) at distal shaft, and the length by 3.0 cm (83.3 %,  $p<0.001$ ). There was no significant difference in 3 circumferences between 6 and 12 months post-treatment (p-values of 0.796, 0.498, and 0.6 for penile base, mid-shaft and distal shaft, respectively). A 5 mm-sized palpable nodule on penile shaft and a mild asymmetry of penile shape were observed as complications. There were no clinically significant adverse events in all subjects.

**Conclusions:** Penile injection of cross-linked dextran and PMMA mixture led to a significant increase in penile size, showed a good durability, and was well tolerated, without serious adverse events. These results suggest that penile injection of cross-linked dextran and PMMA mixture may be a new effective method for penile enhancement.