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EFFICACY AND SAFETY OF THE ZUIDEX™ SYSTEM FOR THE TREATMENT OF STRESS URINARY INCONTINENCE: 6-MONTH RESULTS OF AN OPEN, MULTICENTRE STUDY

Hypothesis / aims of study

Urethral injection has long been available as a treatment option for stress urinary incontinence (SUI), but concerns regarding the safety and effectiveness of previous injectable agents have limited its use. The Zuidex™ system (Q-Med AB, Uppsala, Sweden) comprises four pre-filled syringes of non-animal stabilised hyaluronic acid/dextranomer (NASHA/Dx) gel and an Implacer™ device. NASHA/Dx gel is a biocompatible and biodegradable material, consisting of dextranomer microspheres (80–250 µm in diameter) suspended in a carrier gel of NASHA. The Implacer device allows accurate placement of four implants into the urethral submucosa without endoscopic guidance. The procedure can be performed in the absence of surgical facilities. The present study was performed to evaluate the safety and efficacy of the Zuidex system in the treatment of SUI.

Study design, materials and methods

Patients were recruited at 16 centres in the UK, France, Germany, Italy and Sweden. The study was carefully planned to meet the requirements of Good Clinical Practice (GCP), as well as applicable regulatory requirements. Patients were aged ≥18 years, had a history of SUI for ≥1 year, had failed prior non-invasive therapy, and were invasive-therapy naïve. The presence of SUI was confirmed by a provocation test, and patients were recruited regardless of their pathophysiology (hypermobility and/or intrinsic sphincter deficiency). Exclusion criteria included: bladder storage capacity <200 ml; post-void residual urine (PVRU) >100 ml; cystocele, rectocele or uterine prolapse; detrusor instability and previous surgery for SUI. All patients were treated with Zuidex and attended follow-up assessments at weeks 4, 8 and 12, and month 6 after the initial treatment. There was no exclusion of the initial patients treated with Zuidex. Re-treatment was offered at week 8, unless the patient was dry or improved to her satisfaction. Treatment outcome was measured by provocation test, 24-hour pad weight test, and number of incontinence episodes/24 hours. A positive response to treatment was defined as a reduction in provocation test leakage of at least 50% versus baseline.

Results

A total of 139 patients were enrolled, and their baseline characteristics are shown in Table 1.

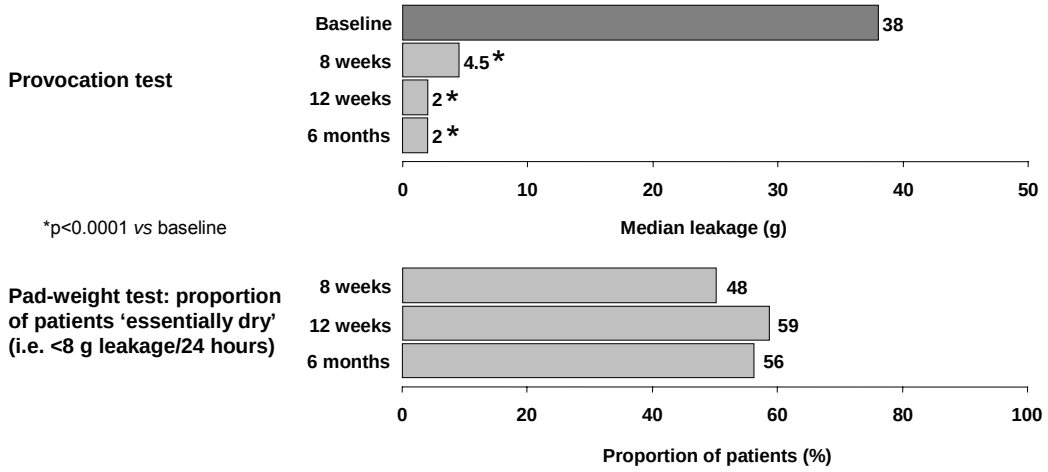
Table 1. Patient demographics (n=139).

Mean age in years (range)	55.3 (27–86)
Mean body mass index in kg/m^2 (range)	25.7 (19.3–33.1)
Post-menopausal (%)	61.9
Mean no. of deliveries (range)	2.1 (0–5)
SUI symptoms for >5 years (%)	49.6

At 8 weeks, approximately half of all patients (49%) considered themselves dry or significantly improved. Thus, only 61 patients (44%) required re-treatment.

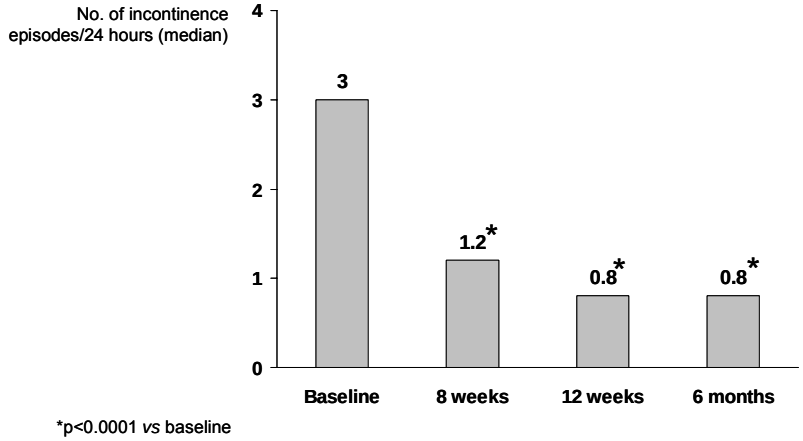
Significant reductions in provocation test leakage were observed at all assessments after the initial treatment, with no evidence of deterioration during the 6-month follow-up period (Figure 1). In addition, almost 6 out of 10 patients were essentially dry according to the 24-hour pad-weight test (i.e. leakage <8 g/24 hours). At 6 months, median provocation test leakage had decreased by 95% compared with baseline. In total, 73% of patients demonstrated positive response at week 12 and month 6.

Figure 1. Results of provocation tests and 24-hour pad-weight tests following Zuidex treatment.



Correspondingly, the number of incontinence episodes/24 hours decreased significantly after Zuidex treatment (Figure 2).

Figure 2. Frequency of incontinence episodes following Zuidex treatment.



Normal bladder function was observed following Zuidex treatment, with a similar number of daily micturitions at 6 months and baseline (7.0 vs 7.5, respectively). PVRU testing also revealed no sign of chronic emptying problems. Treatment-related adverse events were reported by 75 patients (54%). The majority of these were of mild (34%) or moderate (50%) intensity, and of a nature that would be expected with a procedure of this type (e.g. application site disorders – injection site reaction, n=9; pain, n=5; sterile abscess, n=2; bleeding, n=1).The most common treatment-related adverse events were transient urinary retention (associated with 15% of treatment procedures) and urinary tract infection (8% of treatment procedures, occurring at various times during follow-up). The median time taken for adverse events to resolve was 6 days.

Interpretation of results

This is one of the largest GCP studies of urethral injection for SUI performed to date. Zuidex treatment produced large, statistically significant reductions in urinary leakage. Zuidex was well tolerated, with no unexpected adverse events. These findings are in agreement with previous data showing that treatment of SUI with NASHA/Dx gel is effective for up to 7 years, suggesting that Zuidex could be considered for early intervention in treatment-naïve cases.

Concluding message

Treatment of SUI with the Zuidex system is a standardised and highly effective procedure, producing significant reductions in urinary leakage.

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