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DOES SACRAL SURFACE THERAPEUTIC ELECTRICAL STIMULATION AFFECT CONSTIPATION OF RESIDENTS IN A GERIATRIC HEALTH SERVICES FACILITY?

Hypothesis / aims of study

Constipation occurs in 50% of subjects in nursing home settings. A large number of residents in geriatric health services facilities for the elderly, aged 65 years or older, suffer from constipation and use of laxatives in Japan. Recently, sacral nerve stimulation with implanted electrodes has been used for the treatment of constipation. However, the implantation method is invasive with risks of infection, bleeding, and anesthesia. In this study, we evaluated the efficacy and safety of sacral surface therapeutic electrical stimulation (SS-TES) as a noninvasive technique for residents with constipation in a geriatric health services facility.

Study design, materials and methods

Of 13 female residents who agreed to undergo SSTES for overactive bladder, nine residents with a history of constipation, defined as the use of laxative at least once a week for the 4 weeks before the baseline period, were analysed. The mean age was 82.0±5.6 years (range 68 to 86). During the baseline and treatment periods for one month each, the residents were interviewed regarding the stool frequency and stool form twice daily. The stool form was confirmed after each defecation using the Bristol Stool Form Scale. In addition, quality of life (QOL) assessment was carried out before and after treatment; we used a single question "If you were to spend the rest of your life with your defecation the way it is now, how would you feel about that?" to assess the resident's quality of life. The answers to this question ranged from "delighted" to "terrible" or 0 to 6. Electrical stimulation was performed twice daily for one month in their bed with a portable electrical stimulator: 15-minute duration (10 seconds on, 5 seconds off) at a frequency of 30 Hz, biphasic rectangular pulses, 200µs width and sub-maximum tolerable intensity to the subject. The surface electrodes (10cm×6cm) were placed bilaterally at the level of the sacral root from S2 to S4.

Statistical differences were determined by Wilcoxon's signed ranks test. P-values<0.05 were considered significant.

Results

The number of defecation days increased significantly from 20.7±8.1 (mean±S.D.) days/month before treatment to 22.7±8.0 days/month after treatment (p<0.01).

Though there was statistically no significant difference, the stool frequency increased from 33.2 during the baseline period to 37.0 during the treatment period. The very hard and/or hard stools (types 1 and/or 2 on the Bristol Stool Form Scale) decreased from 15.1% to 5.4%. The adequate stools (types 3 and/or 4 and/or 5) increased from 70.2% to 79.9%. There was no change in the incidence of loose and/or watery stools (types 6 and/or 7) at 14.7%. The QOL score improved significantly from 3.1 points before treatment to 1.7 points after treatment (p<0.05). Moreover, there were no side effects of SS-TES and the laxative use in both periods did not change.

Interpretation of results

In this study, we did not change the habitual use of laxatives by residents. Although it became a combined therapy, the number of defecation days increased, the stool forms did not become too loose, and the types of very hard and/or hard stools clearly decreased after this treatment. Residents were satisfied because defecation occurred smoothly. There were no side effects and this method is also low cost and very easy for use in treatment. Further studies are required to evaluate how SSTES is effective, even if taking laxative reduce.

Concluding message

Our results suggest the effectiveness of SS-TES on constipation among elderly female residents who require care in geriatric health services facilities.

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Is this study registered in a public clinical trials registry?	No
What were the subjects in the study?	HUMAN
Was this study approved by an ethics committee?	Yes
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Was the Declaration of Helsinki followed?	Yes
Was informed consent obtained from the patients?	Yes