

THE EFFECT OF INTRAVESICAL DIMETHYL SULFOXIDE FOR INTERSTITIAL CYSTITIS AFTER HYDRODISTENSION.

Hypothesis / aims of study

Dimethyl sulfoxide (DMSO) has been widely used to treat interstitial cystitis (IC). In the US DMSO is reportedly effective for classic types of IC, with a 50~70% symptomatic improvement and 50~90% for non ulcer types of IC. The Ministry of Health, Labour and Welfare in Japan doesn't authorize this medication for IC patients. We then studied the effect of intravesical DMSO therapy after the hydrodistension of Japanese IC patients under informed consent.

Study design, materials and methods

Fifteen IC patients received hydrodistension from August, 2003 to January, 2004. They were treated by intravesical DMSO after hydrodistension once every two weeks 8 times (DMSO group) and thereafter once every four weeks. Another 15 IC patients received hydrodistension from February to August, 2004 without being treated with DMSO (non DMSO group). There were 7 classic types of IC and 8 non ulcer types of IC in each group.

All of the patients recorded frequency-volume charts for four days and the O'Leary-Sant index (ICSI/ICPI) before and 2 and 6 months after hydrodistension.

Results

The average voiding volume (AVV) and the maximum voiding volume (MVV) in non DMSO group increased significantly from 97ml, 176 ml to 171ml, 263ml at 2 months after hydrodistension and 160ml, 266ml at 6 months after hydrodistension, respectively ($p<0.001$). The AVV and the MVV in DMSO group also increased significantly from 69ml, 131ml to 164ml, 271ml at 2 months and 180ml, 297ml at 6 months after hydrodistension, respectively ($p<0.001$).

The ICSI/ICPI in non DMSO group decreased significantly from 13.1/11.7 to 7.1/5.2 at 2 months and 7.8/5.9 at 6 months after hydrodistension, respectively ($p<0.001$). The ICSI/ICPI in DMSO group decreased significantly from 15.7/13.3 to 6.1/4.5 at 2 months and 4.5/3.0 at 6 months after hydrodistension, respectively ($p<0.001$).

In classic types of IC in non DMSO group the AVV and the MVV were 164ml, 231ml at 2 months and 138ml, 210ml at 6 months after hydrodistension, respectively. In classic types of IC treated with DMSO the AVV and the MVV were 177ml, 266ml at 2 months after and 183ml, 283ml at 6 months after hydrodistension, respectively. In non ulcer types of IC with or without DMSO the AVV and the MVV increased at both 2 and 6 months after hydrodistension.

In classic types of IC in non DMSO group the ICSI/ICPI were 8.5/5 at 2 months and 9/7 at 6 months. The ICSI/ICPI in classic types of IC in DMSO group were 5.4/3.3 at 2 months and 4/ 2.6 at 6 months.

There were significant differences in ICSI/ICPI at 6 months after hydrodistension between non DMSO group and DMSO group in classic types of IC (ICSI: $p<0.02$, ICPI: $p<0.03$). In non ulcer types of IC the ICSI/ICPI decreased at 2 and 6 months and there were no differences between two groups at 6 months.

Interpretation of results

Both the AVV and the MVV increased and the ICSI/ICPI decreased at 2 and 6 months after hydrodistension compared with those before hydrodistension in both groups.

In classic types of IC in non DMSO group the AVV and the MVV tended to decrease at 6 months compared with those at 2 months after hydrodistension, nevertheless non ulcer types of IC tended to increase. In classic types of IC in non DMSO group the ICSI/ICPI worsened at 6 months compared with those at 2 months after hydrodistension with significant differences.

Concluding message

Intravesical DMSO for interstitial cystitis after hydrodistension was especially effective for maintaining the effect of the hydrodistension in classic types of IC.

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CLINICAL TRIAL REGISTRATION: This clinical trial has not yet been registered in a public clinical trials registry.

HUMAN SUBJECTS: This study did not need ethical approval because This study was a retrospective study but followed the Declaration of Helsinki Informed consent was obtained from the patients.