

THE STUDY ON HOW THE CYSTOMETRIC RESULTS CAN BE INFLUENCED BY THE TEMPERATURE OF THE INSTILLATION FLUID

Hypothesis / aims of study

The temperature of instillation fluids that are used in cystometry is generally room temperature. Thus, it is different from that of the human body. The cystometry reproduces the storing and voiding phase of urine in the bladder. This research tried to find out if the usage of instillation fluids with a temperature that is close to that of the human body is more appropriate. In doing so, we compared results from the cystometry of the following two temperatures of instillation fluids. The first was room temperature (FRT) and the other was close to body temperature (FBT).

Study design, materials and methods

From January till June 2002, forty six patients participated in this research. Each participant took the cystometry twice using FRT and FBT. The participants in group I took FRT first followed by FBT while those in group II took FBT first followed by FRT. The average temperature of FRT was 23.45 °C and that of FBT was 35 °C. The urodynamic results from those tests were analyzed with SPSS for Windows 11.5.

Results

According to the results obtained from the group I showed that there was a significantly larger bladder volume ($p < 0.05$) for FBT in the following four criteria: bladder capacity, volume for the first voiding sense, volume for normal desire, and volume for strong desire. However, there was no statistically significant difference in group II. Furthermore, we could not find any statistically significant difference in other criteria such as volume for urgency, compliance, maximal voiding pressure, and pressure of uninhibited contraction. When analyzing the results from the entire participants according to the temperature, there was a statistically significant value for FBT in the criterion of volume for strong desire. When analyzing the results from the entire participants according to the order, there was a significantly larger bladder volume ($p < 0.05$) in the following five criteria for the second cystometry compared with the first: bladder capacity, volume for the first voiding sense, volume for normal desire, volume for strong desire, volume for urgency.

Interpretation of results

It could be concluded that repetitions of the test and the temperature of instillation fluid constitute the two important factors which could influence urodynamic study. When compared with the results from the test in which only one urodynamic test with FRT is performed, the bladder seems to be more stable and volume-related results are significantly larger when two urodynamic tests are performed consecutively and when such test is performed with FBT.

Concluding message

Further studies on whether this stability in bladder indeed represents the patho-physiologic state of a patient are suggested.