

## **Folate and homocysteine status in children with neurogenic bladder due to meningocele**

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### **ABSTRACT**

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**Introduction:** Meningocele (MMC) is the most severe form of spina bifida caused by both genetic and environmental components. It is well known that status of folate plays an important role in the risk of neural tube defects. High homocysteine (Hc) level may be associated with disturbed sensory and motor peripheral nerve function and is lowering after folic acid (FA) fortification.

**Purpose:** To explore possible links of FA (folic acid) and Hc (Homocysteine) and to correlate them with renal and bladder function (based on urodynamics) as well as physical activity in patients with NB (neurogenic bladder) after MMC (myelomeningocele).

**Materials and methods:** The investigation was conducted on two groups: group 1- 30 children with neurogenic bladder, group 2 - 20 healthy children with no abnormalities in urinary and nervous systems. The Hc concentration in urine

and serum was estimated using the ELISA set-and FA was measured in serum using electrochemiluminescence method. FA/Hc ratio was calculated in all children.

**Results:** The median serum and urine Hc were higher compared with reference group. Median FA/Hc ratio was statistically significantly lower in MMC group compared to reference group. There were no differences in serum FA between studied groups. We found statistically significant correlations between urodynamics parameters and FA and Hc.

**Conclusions:** Hyperhomocysteinemia and hyperhomocysteinuria could be considered as factors influencing bladder function in MMC patients.

Although serum FA level was in normal range in MMC patients it does not exclude disturbed folic acid status.

**Key words:** folic acid, homocysteine, neurogenic bladder, urodynamic investigation,

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