Kidney function tests were investigated in both 1-day and 7-days DMTU-treated (500 mg/kg ip initially, then 125 mg/kg ip every 12h) rats. The effect of DMTU on maximum urine concentrating function was investigated in low (6%) and normal (20%) protein-fed rats.

Results DMTU non-competitively inhibited UT-A and UT-B with IC_{50} of ~ 3 mM. Following 500 mg/kg ip injection, plasma DMTU concentration was initially 10 mM (plasma elimination $t_{1/2} \sim 10$ h) and urine DMTU concentration was >20 mM for 12 h. DMTU-treated rats showed reversible, sustained reduction in urine osmolality ($>60\%$) and 3-fold increased daily urine output. DMTU increased renal electrolyte-free water excretion without altering solute excretion. DMTU impaired maximum urinary concentrating function only in normal protein-fed rats. Methylurea, a non-UT inhibitor urea analogue, had no effect on either urine volume or osmolality. DMTU-treated rats had greater diuresis and much reduced urinary salt loss compared to that of furosemide-treated rats.

Conclusions These results establish a rat model of sustained UT inhibition and demonstrate remarkable diuretic efficacy of UT inhibition. Prominent effect of UT inhibitors on net renal water excretion implies a novel therapeutic strategy for treatment of oedema in hypervolemic diseases.

Neuromuscular Disorders

O-072 INCREASED INTRACRANIAL PRESSURE IN CHILDREN WITH ACUTE DISSEMINATED ENCEPHALOMYELITIS

R Orbach, N Schneebaum Sender, A Fattal-Valevski. *Pediatric Neurology Unit, Dana Dwek Children's Hospital Tel-Aviv Sourasky Medical Center, Tel Aviv, Israel*

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Introduction Lumbar puncture (LP) is routinely performed as part of the workup evaluation of suspected acute disseminated encephalomyelitis (ADEM). Mild pleocytosis and/or increased CSF protein concentration are common findings in ADEM. However, the CSF opening pressure, reflecting the intracranial pressure (ICP), has not been acknowledged to date in the literature.

Methods Chart reviews of paediatric patients hospitalised in the Tel-Aviv Sourasky medical centre, between 2005–2013, that were diagnosed with ADEM, were identified retrospectively.

Abstract O-072 Figure 1 CSF opening pressure of 20 patients with ADEM. Each dot represents a patient, the blue zone indicates the normal limits of CSF opening pressure, the upper normal limit of 18cmH2O marked as a red line. The scatter plot shows that most patients had elevated opening pressures with 4 patients having values beyond 40cmH2O.

Results Among 35 children diagnosed with ADEM, 20 who had documented CSF opening pressure comprised the study group. The mean age was 5.3 ± 4.1 years, ten males (50%); Mean CSF opening pressure was 27.8 ± 12.4 cmH₂O, range 10–55 cmH₂O. Considering the upper normal limit of CSF opening pressure in this age group (18 cmH₂O), 15/20 (75%) patients had elevated pressure and one sample t-test comparison showed significant elevated CSF opening pressure among patients with ADEM ($p_v = 0.0023$, 95% CI 3.9–15.6). Minimal pleocytosis was present in seven samples (median=2 cells/mm²). Eighteen out of twenty (90%) patients had clinical complaints/signs that can be explained by increased ICP (drowsiness/encephalopathy $n = 18$, vomiting $n = 8$, headache $n = 8$).

Discussion This study highlights that increased ICP is a prominent patho-physiologic change occurring in the CNS of ADEM patients. In our cohort, this was the most common CSF abnormal finding, independent of pleocytosis level. This observation is in line with the common non-focal neurological symptoms and signs and the beneficial effect of steroid treatment in ADEM. Furthermore, it suggests a potential efficacy of other reducing ICP treatments in ADEM.

O-073 TOTAL AND REGIONAL CORPUS CALLOSUM VOLUMES ARE RELATED TO INTELLIGENCE AND MOTOR FUNCTION IN DYSKINETIC CEREBRAL PALSY

¹J Ballester-Plané, ¹O Laporta-Hoyos, ²A Macaya, ³P Póo, ⁴M Meléndez, ⁵E Vázquez, ⁵I Delgado, ¹A Narberhaus, ⁴T Castelló, ³ME Russi, ⁶V Tenorio, ⁷L Zubiaurre-Elorza, ⁸C Torroja-Nualart, ¹D Segarra, ¹R Pueyo. ¹Psychiatry and Clinical Psychobiology, University of Barcelona, Barcelona, Spain; ²Paediatric Neurology, Hospital Vall d'Hebron, Barcelona, Spain; ³Neurology, Hospital Sant Joan de Déu, Barcelona, Spain; ⁴Physical Medicine and Rehabilitation, Hospital Vall d'Hebron, Barcelona, Spain; ⁵Radiology, Hospital Vall d'Hebron, Barcelona, Spain; ⁶Institute Clinic of Gynecology Obstetrics and Neonatology, Hospital Clinic de Barcelona, Barcelona, Spain; ⁷The Brain and Mind Institute, Western University, Ontario, Canada; ⁸Methodology and Behavioral Sciences, University of Barcelona, Barcelona, Spain

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Background The relationship between corpus callosum (CC) morphology and mainly motor outcomes has been studied in spastic cerebral palsy (CP) but not yet in dyskinetic CP, which

Abstract O-073 Figure 1 CC subdivisions generated by Freesurfer (in colour)