

On-line Table 1: Summary of clinical and biochemical profile of controls and patients with and without MHE

Parameters	Healthy controls	No MHE	MHE	P Values ^a		
				Control vs MHE	Control vs No MHE	MHE vs No MHE
Pediatric age group (mean ± SD)						
Age (years)	9.80 ± 2.10	9.60 ± 1.80	9.30 ± 1.00	NS	NS	NS
Spleen size (cm)	Not palpable (0)	7.80 ± 3.80	8.70 ± 1.50	S	S	NS
ALT (U/L)	30.2 ± 11.0	32.2 ± 14.4	38.2 ± 14.5	NS	NS	NS
AST (U/L)	42.0 ± 11.0	48.1 ± 18.2	36.5 ± 10.7	NS	NS	NS
SB (mg/dl)	1.20 ± 0.40	1.00 ± 0.80	1.80 ± 1.80	NS	NS	NS
Albumin (mg/dl)	4.90 ± 0.60	4.60 ± 0.50	4.20 ± 0.50	NS	NS	NS
PT (seconds)	12.0 ± 2.20	14.0 ± 2.50	13.70 ± 1.80	NS	NS	NS
BA level (μmol/L)	41.9 ± 1.5	128.8 ± 25.5	144.7 ± 25.4	S	S	NS
Adolescent age group (mean ± SD)						
Age (years)	16.50 ± 1.20	16.70 ± 1.0	15.80 ± 2.0	NS	NS	NS
Spleen size (cm)	Not palpable (0)	8.60 ± 5.0	8.50 ± 4.2	S	S	NS
ALT (U/L)	33.10 ± 12	30.90 ± 8.1	35.30 ± 11.4	NS	NS	NS
AST (U/L)	40.0 ± 14	36.4 ± 9.2	46.8 ± 15.0	NS	NS	NS
SB (mg/dl)	1.4 ± 0.50	1.6 ± 0.90	1.1 ± 0.90	NS	NS	NS
Albumin (mg/dl)	4.4 ± 0.50	4.3 ± 0.50	3.7 ± 0.60	NS	NS	NS
PT (seconds)	15 ± 1.2	14.0 ± 1.0	16.9 ± 3.9	NS	NS	NS
BA level (μmol/L)	43.8 ± 1.5	125.2 ± 45.3	130.2 ± 26.4	S	S	NS
Adult age group (mean ± SD)						
Age (years)	28.2 ± 4.2	24.9 ± 4.7	26.7 ± 7.8	NS	NS	NS
Spleen size (cm)	Not palpable (0)	8.60 ± 5.8	8.30 ± 3.2	S	S	NS
ALT (U/L)	33.1 ± 11	32.1 ± 15.0	30.4 ± 12.4	NS	NS	NS
AST (U/L)	41.0 ± 13	38.9 ± 14.9	43.2 ± 22.8	NS	NS	NS
SB (mg/dl)	1.50 ± 0.50	1.70 ± 0.90	1.70 ± 0.90	NS	NS	NS
Albumin (mg/dl)	4.2 ± 0.40	4.7 ± 0.60	4.2 ± 0.50	NS	NS	NS
PT (seconds)	14.6 ± 1.2	14.4 ± 2.0	13.6 ± 1.4	NS	NS	NS
BA level (μmol/L)	43.8 ± 1.5	125.2 ± 45.3	130.2 ± 26.4	S	S	S

^a P < .05 was considered as statistically significant.

On-line Table 2: Summary of MD values in healthy controls and patients with and without MHE in all age groups

Regions	Healthy Controls	No MHE	MHE	P Values ^a		
				Control vs MHE	Control vs No MHE	MHE vs No MHE
Pediatric age group (mean ± SD) MD values ($\times 10^{-3}$ mm ² /s)						
FWM	0.74 ± 0.02	0.74 ± 0.01	0.79 ± 0.02	<.001	1.000	<.001
Genu	0.80 ± 0.03	0.81 ± 0.03	0.84 ± 0.05	.036	1.000	.098
Sp	0.73 ± 0.04	0.77 ± 0.04	0.78 ± 0.04	.024	.053	1.000
CG	0.75 ± 0.03	0.76 ± 0.03	0.87 ± 0.03	<.001	.002	<.001
CN	0.74 ± 0.03	0.75 ± 0.04	0.79 ± 0.04	.001	1.000	.010
P	0.69 ± 0.03	0.70 ± 0.02	0.73 ± 0.04	.026	.837	0.207
GP	0.71 ± 0.02	0.72 ± 0.02	0.79 ± 0.03	<.001	.687	<.001
OWM	0.73 ± 0.04	0.75 ± 0.03	0.81 ± 0.06	.001	.818	.008
ALIC	0.73 ± 0.03	0.73 ± 0.04	0.74 ± 0.04	1.000	1.000	.987
PLIC	0.71 ± 0.04	0.70 ± 0.02	0.71 ± 0.04	1.000	1.000	1.000
T	0.73 ± 0.03	0.73 ± 0.02	0.75 ± 0.02	.464	1.000	.326
Adolescent age group (mean ± SD) MD values ($\times 10^{-3}$ mm ² /s)						
FWM	0.67 ± 0.02	0.70 ± 0.04	0.75 ± 0.03	.001	.164	.069
Genu	0.72 ± 0.02	0.73 ± 0.04	0.76 ± 0.03	.020	1.000	.028
Sp	0.71 ± 0.03	0.72 ± 0.03	0.72 ± 0.01	1.000	.441	1.000
CG	0.71 ± 0.05	0.76 ± 0.04	0.81 ± 0.04	.001	.069	.162
CN	0.70 ± 0.01	0.74 ± 0.03	0.77 ± 0.03	<.001	.012	.184
P	0.66 ± 0.01	0.68 ± 0.02	0.71 ± 0.02	<.001	.084	.045
GP	0.68 ± 0.02	0.70 ± 0.01	0.74 ± 0.03	<.001	.364	.006
OWM	0.67 ± 0.03	0.72 ± 0.02	0.74 ± 0.03	.001	.006	.779
ALIC	0.71 ± 0.02	0.73 ± 0.02	0.73 ± 0.03	.457	.541	1.000
PLIC	0.64 ± 0.03	0.65 ± 0.02	0.68 ± 0.02	.013	1.000	.050
T	0.68 ± 0.02	0.71 ± 0.02	0.73 ± 0.04	.003	.036	.538
Adult age group (mean ± SD) MD values ($\times 10^{-3}$ mm ² /s)						
FWM	0.69 ± 0.02	0.71 ± 0.03	0.73 ± 0.02	<.001	.050	.483
Genu	0.72 ± 0.01	0.72 ± 0.02	0.73 ± 0.03	.567	1.000	1.000
Sp	0.72 ± 0.05	0.72 ± 0.04	0.72 ± 0.03	1.000	1.000	1.000
CG	0.71 ± 0.03	0.74 ± 0.05	0.76 ± 0.03	.005	.140	.840
CN	0.71 ± 0.03	0.72 ± 0.02	0.76 ± 0.06	.002	1.000	.070
P	0.66 ± 0.02	0.67 ± 0.03	0.71 ± 0.04	<.001	1.000	.005
GP	0.69 ± 0.02	0.70 ± 0.03	0.72 ± 0.03	.013	1.000	.250
OWM	0.69 ± 0.04	0.72 ± 0.02	0.74 ± 0.04	.001	.046	.638
ALIC	0.70 ± 0.02	0.71 ± 0.03	0.74 ± 0.03	.004	1.000	.022
PLIC	0.66 ± 0.03	0.64 ± 0.02	0.69 ± 0.04	.043	.981	.011
T	0.68 ± 0.03	0.70 ± 0.02	0.71 ± 0.03	.043	.290	1.000

^a $P < .05$ was considered as statistically significant.

On-line Table 3: Summary of FA values in healthy controls and in patients with and without MHE in all age groups

Regions	Healthy Controls	No MHE	MHE	P Values ^a		
				Control vs MHE	Control vs No MHE	MHE vs No MHE
Pediatric age group (mean ± SD) FA values						
FWM	0.28 ± 0.07	0.29 ± 0.04	0.29 ± 0.02	1.00	1.00	1.00
Genu	0.44 ± 0.05	0.46 ± 0.07	0.46 ± 0.05	.77	.50	1.00
Sp	0.53 ± 0.07	0.48 ± 0.13	0.48 ± 0.05	.86	.46	1.00
CG	0.13 ± 0.05	0.12 ± 0.04	0.11 ± 0.01	.88	1.00	1.00
CN	0.09 ± 0.01	0.08 ± 0.01	0.09 ± 0.01	1.00	1.00	1.00
P	0.11 ± 0.02	0.10 ± 0.02	0.09 ± 0.01	.13	1.00	1.00
GP	0.10 ± 0.01	0.10 ± 0.02	0.09 ± 0.01	.28	.22	1.00
OWM	0.43 ± 0.07	0.46 ± 0.06	0.45 ± 0.06	1.00	.33	1.00
ALIC	0.33 ± 0.07	0.34 ± 0.04	0.34 ± 0.03	1.00	1.00	1.00
PLIC	0.40 ± 0.12	0.43 ± 0.03	0.42 ± 0.02	1.00	.17	.92
T	0.12 ± 0.03	0.15 ± 0.02	0.15 ± 0.01	1.00	1.00	1.00
Adolescent age group (mean ± SD) FA values						
FWM	0.32 ± 0.04	0.31 ± 0.05	0.32 ± 0.06	1.00	1.00	1.00
Genu	0.55 ± 0.08	0.43 ± 0.15	0.46 ± 0.08	.51	.13	1.00
Sp	0.50 ± 0.16	0.53 ± 0.09	0.46 ± 0.17	.71	1.00	.28
CG	0.13 ± 0.03	0.13 ± 0.03	0.12 ± 0.02	1.00	1.00	1.00
CN	0.13 ± 0.08	0.12 ± 0.09	0.14 ± 0.09	1.00	1.00	1.00
P	0.11 ± 0.03	0.11 ± 0.03	0.12 ± 0.07	1.00	1.00	1.00
GP	0.12 ± 0.03	0.13 ± 0.04	0.13 ± 0.02	1.00	1.00	1.00
OWM	0.42 ± 0.08	0.42 ± 0.08	0.41 ± 0.07	1.00	1.00	1.00
ALIC	0.33 ± 0.03	0.33 ± 0.05	0.28 ± 0.05	.18	1.00	.12
PLIC	0.45 ± 0.03	0.47 ± 0.03	0.46 ± 0.02	1.00	.37	1.00
T	0.16 ± 0.02	0.16 ± 0.02	0.16 ± 0.02	1.00	1.00	1.00
Adult age group (mean ± SD) FA values						
FWM	0.31 ± 0.04	0.30 ± 0.03	0.28 ± 0.04	.14	.60	1.00
Genu	0.50 ± 0.04	0.47 ± 0.03	0.48 ± 0.05	.62	.11	1.00
Sp	0.57 ± 0.09	0.49 ± 0.11	0.54 ± 0.11	1.00	.10	.68
CG	0.14 ± 0.02	0.14 ± 0.03	0.13 ± 0.02	.82	1.00	1.00
CN	0.10 ± 0.02	0.11 ± 0.05	0.11 ± 0.03	.72	.57	1.00
P	0.14 ± 0.07	0.12 ± 0.04	0.13 ± 0.07	1.00	1.00	1.00
GP	0.16 ± 0.05	0.14 ± 0.04	0.15 ± 0.05	1.00	.86	1.00
OWM	0.44 ± 0.06	0.40 ± 0.09	0.41 ± 0.07	.85	.32	1.00
ALIC	0.34 ± 0.05	0.33 ± 0.03	0.35 ± 0.06	1.00	1.00	1.00
PLIC	0.43 ± 0.05	0.44 ± 0.02	0.44 ± 0.06	1.00	1.00	1.00
T	0.16 ± 0.04	0.16 ± 0.03	0.16 ± 0.03	1.00	1.00	1.00

^a P < .05 was considered as statistically significant.**On-line Table 4: Summary of metabolite concentrations in healthy controls and in patients with and without MHE in 3 different age groups**

Metabolite Concentrations (mmol/kg)	Healthy Controls	No MHE	MHE	P Values ^a		
				Control vs MHE	Control vs No MHE	MHE vs No MHE
Pediatric age group (mean ± SD)						
Glx	14.4 ± 1.5	15.4 ± 1.7	17.7 ± 2.5	.001	.060	.500
Myo-inositol	3.6 ± 1.00	3.5 ± 0.74	3.5 ± 0.70	1.000	1.000	1.000
Choline	1.4 ± 0.17	1.3 ± 0.15	1.4 ± 0.24	1.000	.800	.600
NAA	7.8 ± 1.00	7.9 ± 0.70	7.9 ± 0.80	1.000	1.000	1.000
Creatine	7.0 ± 1.0	6.5 ± 0.83	6.6 ± 0.73	.722	.693	1.000
Adolescent age group (mean ± SD)						
Glx	14.5 ± 2.2	15.5 ± 1.5	17.4 ± 1.9	.043	.850	.201
Myo-inositol	3.2 ± 1.10	3.1 ± 1.00	2.2 ± 1.10	.780	1.000	.770
Choline	1.4 ± 0.35	1.3 ± 0.31	1.4 ± 0.340	1.000	1.000	1.000
NAA	7.8 ± 1.60	7.6 ± 1.40	7.5 ± 1.90	.780	1.000	.720
Creatine	7.0 ± 1.4	6.4 ± 1.0	6.1 ± 1.2	1.000	.809	1.000
Adult age group (mean ± SD)						
Glx	13.6 ± 2.2	14.7 ± 2.6	17.6 ± 3.4	<.001	.739	.026
Myo-inositol	3.3 ± 0.70	2.8 ± 0.79	1.6 ± 0.52	<.001	.083	.001
Choline	1.3 ± 0.34	1.4 ± 0.40	1.4 ± 0.32	1.000	.610	1.000
NAA	7.1 ± 1.2	7.2 ± 1.3	7.2 ± 2.20	1.000	1.000	1.000
Creatine	6.2 ± 0.80	6.7 ± 1.0	6.1 ± 0.72	.385	1.000	.182

^a P < .05 was considered as statistically significant.