

**Glutamine and Whey Protein Improve Intestinal Permeability and Morphology in Patients with Crohn's Disease: A Randomized Controlled Trial**

Randomized single-center open-label trial. Patients with CD and intestinal permeability being in clinical remission (CDAI<150) were randomized to a glutamine group (GG) 0.5g/kg ideal body weight/day or active control group and were given whey protein 0.5g/kg idel body weight/day for 2 months. IP was assessed by the lactulose mannitol excretion ratio (LMR) in urine. IP was considered abnormal if LMR in urine was >0.037

Primary endpoints: LMR at 2 months

**Results: N=30**

- At 2 months there were no differences in GG vs active control group in the LMR, p=0.6133
- IP normalized in 57.1% patients in each group, p=ns
- No significant differences were found at 2 months in the level of plasma glutamine levels between patients and healthy controls or between GG and active control groups.
- Adverse events: 50% GG vs 14.3% active control experienced increase in the stool frequency with the supplements.

**Conclusion:**

Intestinal permeability and morphology improved in both glutamine and active control group without differences between them.

Variable	n	Glutamine group	Active control group	P value
<b>Lactulose excretion (%)</b>				
Baseline	15	0.725 (0.102–1.80)	0.707 (0.269–3.19)	0.8357
2 months	14	0.536 (0.091–1.15)	0.501 (0.199–1.95)	0.7477
P value		0.0186*	0.0413*	
<b>Mannitol excretion (%)</b>				
Baseline	15	10.4 (1.05–22.4)	9.9 (2.5–23.8)	1.000
2 months	14	17.7 (3.0–27.6)	17.5 (6.4–44.2)	0.9450
P value		0.0026*	0.0186*	
<b>Lactulose mannitol ratio</b>				
Baseline	15	0.071 (0.041–0.254)	0.067 (0.040–0.136)	0.9835
2 months	14	0.029 (0.006–0.090)	0.033 (0.009–0.077)	0.6133
P value		0.0012*	0.0063*	
<b>IP at 2 months</b>				
Normal		8 (57.1)	8 (57.1)	1.000
Abnormal		6 (42.9)	6 (42.9)	
Difference in proportion of abnormal IP (95% CI)		0.0 (–36.7, 36.7)		

