

PLASMA AMINO ACID PROFILES IN DOGS WITH CLOSED EXTRAHEPATIC PORTOSYSTEMIC SHUNTS DO IMPROVE BUT REMAIN ABNORMAL THREE MONTHS AFTER SUCCESSFUL GRADUAL ATTENUATION

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Background – The liver is involved in many essential functions, including metabolism of proteins. A portosystemic shunt (PSS) is an aberrant blood vessel causing blood to bypass the liver. Consequently, liver perfusion is reduced, resulting in an underdeveloped liver with impaired function. Dogs with PSS have an abnormal blood amino acid profile, with an abnormal branched-chain amino acid (BCAA) to aromatic amino acid (AAA) ratio being the most obvious and important aberrance. **Aims** – Determine the evolution of plasma amino acid profiles in dogs with extrahepatic PSS (EHPSS) from diagnosis to complete closure. **Methods** – A prospective cohort study was performed. Medical therapy was instituted in dogs diagnosed with EHPSS. Minimally 4 weeks later, surgical attenuation was performed. Three months after the surgery, EHPSS closure was confirmed by transsplenic portal scintigraphy. Clinical signs were scored and blood was taken prior to institution of medical therapy, at time of surgery, and three months postoperatively. Plasma amino acid profiles were analyzed in batch. **Results** – Ten client-owned dogs were included with EHPSS closed after surgical attenuation. The median BCAA to AAA ratio was extremely low at time of diagnosis (.6) and remained low at time of surgery (.5), despite the fact that the dogs clinically significantly improved after starting medical therapy ($p=.041$). Three months after surgical attenuation, a significantly higher BCAA to AAA ratio was observed (1.5, $p<.001$). **Conclusions** – Medical therapy does not improve the BCAA to AAA ratio in dogs with EHPSS, despite significant clinical improvement. Although the ratio significantly increased after EHPSS closure, it was still indicative of moderate to severe hepatic dysfunction in all dogs.