Protein Losing Enteropathy following Fontan Palliation in the Single Ventricle Population

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Protein Losing Enteropathy following Fontan Palliation in the Single Ventricle Population

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Theories on the Pathophysiology behind Protein-Losing Enteropathy

The pathophysiology of the development of protein-losing enteropathy has not been precisely determined but several theories exist. The lymphatic and cardiovascular system are closely related; elevated central venous pressures increase lymphatic production while simultaneously slowing lymphatic return (Meadows & Jenkins, 2011, p. 371). One theory is that the increased systemic venous pressures related to the passive blood flow to the pulmonary arteries cause dilation of the systemic venous system within the gastrointestinal tract leading to leakage of protein into the gastrointestinal tract (Umar & Dicharry, 2009). A second theory is the elevated systemic venous pressure along with the impaired cardiac output from a single ventricle state combine to impair perfusion and oxygenation to the gastrointestinal tract (Umar & Dicharry, 2009). The impaired blood flow and ischemia compromise the endothelial and epithelial function leading to leakage into the lumen. "Gross and microscopic pathologic examination of the intestine in patients with protein-losing enteropathy demonstrates several characteristic features in common with patients with interstitial foot process enlargement, stasis and mucous" (Meadows & Jenkins, 2011, p. 368). A third theory suggests that the chronic low cardiac output state of a person with single ventricle circulating causes inflammation; cytokines cause vasoconstriction and have been found at elevated levels in patients with protein-losing enteropathy. Hence, the elevated cytokine levels years after the procedure (Ostroff, Freese, & Rychik, 2006, p. 696). The pathophysiologic significance of these findings lies in the fact that there is no definitive causative source leading to the development of protein-losing enteropathy. The lack of a determined underlying cause creates difficulty for providers attempting to medically manage this population of patients.

Medical Management of Protein-Losing Enteropathy

Management of protein-losing enteropathy has proven to be inadequate for patients and families. Supportive measures include dietary restrictions, diuretics, including Lisinopril and spironolactone, and intermittent albumin infusions (Braamskamp, 2008). Hepatic encephalopathy, a complication of chronic, fatal condition so the diagnosis can be devastating. The nurse can improve the experience for the patient and family by developing early palliative care. There are no specific ethical issues revolving around the care of the patient with PLE and the nurse must advocate for the patient adequate and successfully explore the available treatment options to the patient," (Ziegler, 2003, p. 69). The nurse is responsible for the proper. Additional Sources


References


