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BOWEL PREPARATION FOR COLONOSCOPIES AND HYPOGLYCAEMIA

S. Iqbal, L. Dyal, N. Canchi-Murali, C. Millar

Birmingham Children's Hospital, UK

Background

Children undergoing colonoscopies are advised to follow bowel preparation regimens to allow visualisation of the bowel during the procedure. Within our tertiary paediatric centre, bowel preparation includes two days of a low residue diet, followed by weight-dependent doses of Senna and Sodium Picosulfate. This is then followed by starvation in the preoperative period. Our fasting guidelines include avoidance of solids for six hours, breast milk for four hours and clear liquids for one hour preoperatively.

Problem

The combination of preoperative starvation and bowel preparation can lead to hypoglycaemia in some children. This was discovered on testing a symptomatic child in the anaesthetic room. An audit was therefore designed to assess the scale of the problem.

Data was collected prospectively in children undergoing elective colonoscopies. A bedside blood glucose test was performed on insertion of a venous cannula as part of the anaesthetic induction process.

Though the audit is on-going, data collected so far shows 26% of the patients (5 of 19) had a blood glucose level of 3.5mmol/l or below (range 3.2 to 3.4mmol/l). Prior to commencement of the audit, blood glucose level as low as 2.1mmol/l was found on testing patients on induction. Patients with glucose level less than 3.5mmol/l in the current on-going audit had an average BMI of 17.4 and an average age of 9 years, compared with the overall average age of 11 years, and BMI 21. There currently appears to be no association between the presence of diarrhoea, weight loss or a specific diagnosis with hypoglycaemia in these children.

Strategy for Change

We recommend all patients receiving bowel preparation have a blood glucose check on the ward.

Upon completion of the audit, we aim to grade levels of hypoglycaemia in these children and recommend treatment strategies based on severity.

We are also exploring the use of low residue high carbohydrate content drinks in patients undergoing bowel preparation in the preoperative period, as an addition or alternative to clear fluids in the fasting period. This may reduce the incident of hypoglycaemia in children undergoing colonoscopies under general anaesthesia.

Lessons learnt

Colonoscopies are commonly performed on children under general anaesthesia. The aggressive bowel preparation regime coupled with preoperative fasting can lead to hypoglycaemia. Blood glucose should be checked routinely in these children. Liberal fasting regimens, and the use of

carbohydrate containing clear fluids in the fasting period may help reduce the incidence of hypoglycaemia in these children.