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P21 SCURVY DURING HOME PARENTERAL NUTRITION

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Introduction Degradation of ascorbic acid due to oxygen presence in parenteral nutrition (PN) is well documented.¹ Although patients on home parenteral nutrition (HPN) are routinely monitored for some vitamin deficiencies, plasma vitamin C is rarely measured in this population.

We report a case of clinical vitamin C deficiency in a patient with severe dysmotility for whom the only source of nutrition was parenteral nutrition with continuous infusion over 24 hours.

Methods A 6 years old girl with severe gastrointestinal dysmotility following a fundoplication tolerated no enteral feed and could not have time off PN due to hypoglycaemic episodes. She presented with gingival bleeding and epistaxis and also complaining of pain on her arms and shoulders. A clotting was requested which showed prolonged INR and she was treated with IV vitamin K. An x-ray of her wrist and shoulder showed osteopenia but no other abnormalities. Vitamin C measurement was requested.

Results Plasma vitamin C was low at 3.5 micromol/L (26.1–84.6) which confirmed the diagnosis of scurvy. She was treated with 3 doses of Pabrinex® over 3 days (providing total of 450 mg vitamin C). 100 mg of ascorbic acid were also added to her PN, providing double the baseline amount. Plasma vitamin C measured after two weeks had risen to normal at 45 micromol/L. Her bleeding and pains resolved over a few days. During the next year plasma vitamin C was measured every three months and remained within reference range. She remained clinically well with no recurrence of bleeding. Due to methodology limitations, the amount of vitamin C in the PN bag could not be tested. Therefore we decided to measure plasma vitamin C in two other patients that had PN as the only source of nutrition and given over 12 hours. In both cases the result was within the reference range at 58.7 and 38 micromol/L respectively. Published literature² suggests that temperature contributes to vitamin C degradation. The PN fluid would have been at room temperature for around 24 hours for the patient that developed scurvy, compared to half this time in the other two.

Conclusions This case highlights that there is a significant risk of vitamin C degradation due to the oxygen present within the PN bag. However, the fact that for the other 2 patient's plasma vitamin C was normal suggests that presence of oxygen alone might not be enough to cause vitamin C insufficiency. Temperature might be a contributing factor to vitamin C degradation, as has been shown with enteral feed.³ From these cases we concluded that measurement of vitamin C during HPN would be indicated not only if there were suggestive symptoms, but should also be added in to routine monitoring

in any patient with a 24 hour infusion time and extremely restricted enteral intake.

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P22 DEVELOPING A PHARMACOLOGY MODULE FOR THE PAEDIATRIC NON-MEDICAL PRESCRIBING COURSE

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Introduction Demand from local NHS stakeholders identified a gap for a taught education course tailored to the niche requirements of paediatric healthcare staff wishing to become non-medical prescribers. This was seen as an excellent opportunity to review and develop the pharmacology module within the Non-medical Prescribing (NMP) course by giving it a paediatric focus.

Aim To develop a pharmacology module with an emphasis on paediatric prescribing that meets the professional requirements of the General Pharmaceutical Council (GPhC), the Nursing and Midwifery Council (NMC) and the Health Care Professions Council (HCPC).

Method Knowledge of curriculum design and structure was utilised in developing the paediatric pharmacology module. This ensured that the underpinning theory of prescribing medicines safely for children was delivered at the right academic level. The content, delivery and learning outcomes were dictated by the Prescribing Competency Framework for All Prescribers (RPS, 2016).¹ But the cognitive teaching and learning methods arose from the rigid expectation to meet the regulatory requirements of each professional body. To ensure consistency across the whole NMP programme, the structure of the pharmacology module assessments (both formative and summative) was kept the same. The summative (final) assessments consisted of a multiple choice question (MCQ) paper requiring the students to answer a total of twenty MCQs, with the pass mark set by the regulatory bodies at 80%; a drug calculations paper consisting of five questions with a 100% pass mark; and a 5 minute information giving OSCE (objective structured clinical examination). The whole module was looked at a fresh from a paediatric perspective. The content and timetable were compiled and reviewed jointly by a paediatric pharmacist and a paediatric nurse. Both were experienced academics already teaching on the NMP course. While some of the lectures were delivered by in-house university academic staff, the majority of the sessions were delivered by specialist paediatric guest lecturers who were actively working in their respective clinical fields. This ensured that the knowledge imparted to students was practical, current and relevant to prescribing for children.

Results All students had to be practising in paediatrics for a minimum period of two years and have evidence of studying at level 6 (graduate level) or equivalent. The target audience consisted of allied healthcare professionals specialising in paediatrics, including nurses, pharmacists, optometrists,