Paravit-CF™ Peer to Peer Review

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Supplementation of fat-soluble vitamins A, D, E and K is a fundamental part of the nutritional management of patients with cystic fibrosis who have pancreatic insufficiency. As part of the polypharmacy required to treat cystic fibrosis, vitamin supplementation can cause a significant medication burden to patients.

The vitamin regimens can be confusing and onerous with various preparations needed to meet the recommended intake, consisting of either different liquid volumes for young children or 2-3 tablets for older children. These can be hard to remember and may not be considered a priority, which can lead to difficulty in ensuring patients are receiving the correct dose of each vitamin. To overcome the concerns of confusing regimens and inaccurate dosing, vitamin preparations specific to cystic fibrosis have been developed.

Parapharm's Paravit-CF™ is a liquid preparation which may reduce the medication burden for patients while simplifying the treatment for families. As well as this, Paravit-CF™ contains vitamin K which was previously not easily available or palatable in liquid form. Paravit-CF™ has vitamin D in the form of cholecalciferol, which is recommended as the preferred type of vitamin D by the CF Trust.[1]

Alder Hey Children's NHS Trust is a tertiary centre providing shared care to approximately 300 patients across north west England and north Wales. We decided to trial the use of Paravit-CF™ liquid in our younger patients. Use of Paravit-CF™ reduced the vitamin regimen from 2 ml of two separate vitamin preparations to only 0.125 ml or 0.25 ml of one preparation, depending on age.

For this reason, all our patients' families consented to the change in prescription. Although the combined preparation can ease treatment, it has some disadvantages, mainly the inability to adjust specific vitamin doses. However, we felt the benefits of ease of dosing for the family far outweighed this negative, so we proceeded with the transition. Vitamin levels are monitored in standard annual reviews for patients, so changes to dosing or the product used could be made if needed.

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Paravit-CF™ was added to the hospital pharmacy and the formulary for the area. This gave general practitioners (GPs) the ability to prescribe it. Parapharm ensured Paravit-CF™ was available from all local wholesalers to facilitate an adequate supply to pharmacies. Despite this, there were initially some difficulties with GPs not prescribing the product and some pharmacies not willing to dispense the product, or not having it in stock. To overcome this, letters were sent to GPs explaining the change and giving clear prescription requests. Letters with information for the pharmacists, regarding what to dispense and providing Parapharm representative details, were also given to parents to take to their local pharmacy. Parapharm liaised with wholesalers to increase their local stock to improve supply to pharmacies and therefore patients.

When we began using Paravit-CF™ in 2017/2018 we had some reservations about using the dropper on the bottle of the liquid to measure small doses. We were also concerned that the dropper may not give an accurate dose of the vitamins. As the product is highly concentrated, small errors in volume could lead to patients receiving significantly different doses to that prescribed. To overcome this, we asked that all patients used a 1 ml syringe and did not routinely use the dropper. Parapharm subsequently changed the presentation of this bottle and provided a syringe with the product. When the capsule form became available, we began prescribing this for our older children, which reduced their vitamin regime from 6-8 tablets daily to only one to two tablets.

We now have more than 300 patients in the network taking either the liquid or the capsule form of Paravit-CF™. Its use has been positive for patients, their families, and our clinical team through easier administration and prescription. Patients have no difficulty in taking the product and we no longer have any prescribing or stock issues.

The monitoring of patients' vitamin levels has revealed higher vitamin D levels over the last three years. This may be because of the improved preparation and dose leading to better patient compliance. Other factors could have affected vitamin D levels such as a warm summer, but the introduction of Paravit-CF™ seems to be a relevant factor. Some patients have developed high vitamin A levels while taking Paravit-CF™. This raised the concern of needing to return to single vitamin preparations. However, this has not been necessary as patients have maintained good levels of vitamins A, E & D by reducing the Paravit-CF™ dose and taking additional Vitamin D as a single preparation. It is possible some of the improvement in vitamin levels is because of the use of modulator therapies and overall improved absorption for patients. As a consequence, titration of vitamin doses may need to be considered in the future for patients who are seeing significant improvement in absorption from these new drugs.

We have found the use of Paravit-CF™ within our network to have a positive impact on our patients. Overall, the vitamin levels of our patients have improved, and we have an ongoing audit to confirm this. In patients with abnormal vitamin levels, the adjustment of the dose of Paravit-CF™ with the addition of individual vitamins has been manageable and preferable to returning to the previous products. For anyone considering changing to Paravit-CF™ I would recommend early involvement with a pharmacist to ensure the product is available on the local formulary. I also advise clear communication in advance, to ensure GPs can prescribe, pharmacies can dispense and wholesalers have appropriate stock in place to facilitate a smooth transition.

References: 1. Cystic Fibrosis (2016). Cystic Fibrosis: Our focus. Accessed online: www.cysticfibrosis.org.uk/sites/default/files/2020-12/Nutritional%20Management%20of%20cystic%20fibrosis%20Sep%2016.pdf (July 2021).