The provision of nutrition to adult patients is currently high on the political agenda. This article discusses recent guidance on nutrition and the potential impact on pharmacy, particularly with regard to parenteral nutrition.

Guidance from the National Institute for Health and Clinical Excellence, entitled “Nutrition support in adults”, was published in 2006. It is profoundly affecting how nutrition services are provided. The document outlines the best evidence-based practice for providing nutrition support and organising nutrition services.

A key requirement of the NICE guidance is that all hospital trusts should have a nutrition steering committee working within the clinical governance framework. It is essential that pharmacy has a role on this committee to encourage the safe use of parenteral nutrition (PN) and to direct the provision or acquisition of aseptic services.

In 2007, the Department of Health issued its nutrition action plan, which outlines how nutritional care and hydration can be improved. The plan suggests five priority areas, four of which directly impact on pharmacy:

- Raising general awareness of the link between nutrition and health
- Nutritional screening for all patients (which can be done by pharmacists in preadmission clinics)
- Providing multidisciplinary nutrition support in hospitals
- Protecting mealtimes for patients (during which they should not be visited by any healthcare practitioners)

All of these offer opportunities for pharmacists to be involved in improving the nutritional care of their patients.

In response to the NICE guidance and the DoH plan, the British Association for Parenteral and Enteral Nutrition has developed a web-based information resource on the organisation of nutrition support in hospitals (accessed at www.bapen.org.uk/ofsh).

Parenteral nutrition
PN is a high risk intravenous therapy, the use of which must be supervised and monitored by trained staff. Historically, PN was administered on wards using a series of bottles and bags. Now, patient-specific products are compounded in pharmacy aseptic units, or by external manufacturers, before delivery to wards. If compounding is outsourced, the trust must ensure the service capacity and responsiveness is sufficient for its requirements and sufficient knowledge and skill are retained within the trust.

Deskilling practitioners
The widespread use of standard bags, reduction in pharmacy input into provision and in some cases absolution of responsibility (other than adding standard bags to ward stock lists) undermines the established role that pharmacy should have in the safe provision of PN. The British Pharmaceutical Nutrition Group (BPNG) has issued a position statement on the appropriate use of the multichamber commercially available products, proposing their applications and limitations in clinical practice (available at www.bpng.org.uk).

It could be argued that sending a standard PN bag to a ward without the necessary additions, when aseptic services are available, is negligent. All bags should be nutritionally complete when they arrive on wards, The recent NPSA alert 20 (“Promoting safer use of injectables”) recommends that all necessary additions to PN should be made in a pharmacy. This message is reinforced in the product literature.

Prescribing PN
Pharmacists need to receive appropriate training and be suitably competent to recommend nutritional products for patients. Prescribing and nutritional support training will be essential for pharmacists who wish to assess and prescribe parenteral nutrition.

Pharmacists have a role to play, within the multidisciplinary team, in educating medical colleagues on the effective monitoring of PN and how to minimise complications.

Calculating requirements
Patients who receive PN for more than two to four weeks (long-term feeding) are at increased risk of metabolic complications if the regimen is inappropriate. NICE has issued general
guidelines for prescribing PN, but these are not suitable for patients who receive long-term feeding.

Long-term feeding Initial requirements are estimated using equations (eg, Schofield) that predict individual requirements based on demographic, nutritional and stress factors. NICE requirements are calculated, a suitable regimen can be designed. The importance of the individual nature of this assessment should be emphasised, since miscalculations can lead to metabolic complications (eg, refeeding syndrome — see panel, right).

PN for long-term feeding patients should be gradually changed from continuous to cyclical delivery. Infusion times will depend on the patient's underlying condition, renal function, cardiac function, blood glucose control and potassium content of the PN. Cyclical feeding will help to reduce the hepatic complications of PN.

Nutritional requirements should be reviewed regularly and overfeeding avoided. Weight gain is only achievable when the patient is anabolic, and should be assessed through improvements in anthropometrics (eg, a reduction in the circumference of the mid-arm) and functional indicators such as hand grip strength. Inappropriate overfeeding will lead to liver dysfunction and central adiposity.

Short-term feeding For short-term feeding (less than two weeks), in patients who are not severely ill or injured, or at risk of refeeding problems NICE recommends that the nutritional prescription should usually provide:

- Calories 25–35kcal/kg per day
- Protein: 0.8–1.5g/kg per day
- Fluid: 30–35ml/kg per day
- Adequate electrolytes, minerals, micronutrients and fibre (if appropriate)

Any subsequent adjustments to the regimen used should be made in reaction to the patient response. However, in clinical practice, individualised requirements are usually calculated to minimise any risk of overfeeding.

Off-the-shelf bags should not be used, unless patients can get their full micronutrient and trace element requirements via another route (eg, a separate multivitamin infusion).

Route of administration All pharmacists should be competent to advise, in conjunction with specialist nursing support, on the appropriate route of access.

PN can be administered peripherally (eg, via a peripherally inserted central catheter) or via a long-term central venous catheter. These devices must be used for PN only, unless vascular access is compromised. Where access is compromised and large quantities of intravenous drugs are also being administered (eg, in intensive care), a multi-lumen line may be used, provided one lumen is dedicated for PN. Line sepsis is a potential complication, so line care and access must be undertaken by suitably trained staff.

Weaning parenteral nutrition Once a patient's intestinal function recovers sufficiently to allow the reintroduction of enteral diet or supplements, care must be taken to wean the patient off PN. This will prevent metabolic complications (eg, hyperglycaemia) which will occur with the over-administration of calories.

Care should be taken to provide adequate communication when weaning from PN to enteral nutrition, and dietetic advice is recommended.

Out-of-hours supply

For adult patients, PN is not an emergency therapy. It is inappropriate to initiate PN out of hours or over a weekend unless professionals are available to make the correct clinical assessment.

Those patients whose histories make a compelling argument for urgent initiation of PN are usually the highest risk for complications and refeeding syndrome. For these patients, it is especially important that assessment and initiation are carried out under the instruction of a competent professional.

Enteral nutrition

Pharmacy's role in enteral nutrition services is changing in response to the National Patient Safety Agency alert 19 ("Promoting safer measurement and administration of liquid medicines via oral and other enteral routes"). As a result of implementing the alert, pharmacy departments have a more active involvement in enteral nutrition policy and education.

Any pharmacy departments are responsible for purchasing and supplying enteral nutrition products, and this requires liaison with dietitians to ensure appropriate products are available.

NICE suggests that bolus or continuous delivery enteral nutrition should be considered when feeding into the stomach. This should take into account patient preference, convenience and drug administration.

It is important that pharmacists are aware of which nutritional support methods are being used in their patients and consider interactions between drugs and feeds (see p243), or the patient's ability to take oral medicines if he or she is unable to eat normal food.

Conclusions

Every pharmacist can play a role in implementing national guidance on improving nutritional care.

Pharmacists have a responsibility to safeguard the supply and administration of PN as a high-risk injectable therapy. Those involved in nutrition services must ensure that their knowledge of this treatment remains up-to-date and relevant.

The BPNG is developing a competency framework for pharmacists working in nutrition to support continuing professional development. This will be published on the BPNG website (www.bpng.co.uk) later this year.

References


Suggestions for future special features

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