MYTH 2: All parenteral nutrition has to be stored in the fridge

Home Artificial Nutrition 2021 Awareness Week 2 - 8 August 2021 PINNT

FALSE

Some bags of PN or fluids don't need to be stored in the fridge.

- Bags of fluid or nutrition that have been sterilised by the manufacturer do not need to be stored in the fridge.
- Multi-chamber bag ingredients are separated out into 2 or 3 chambers to reduce interaction between the ingredients and don't need to be stored in the fridge.
- Intravenous fluid bags don't need to be stored in the fridge.

PN or fluid bags made in a pharmacy clean room.

- In a compounded PN all the ingredients are dissolved in one bag, these are stored in the fridge.

1 WHY DOES COMPOUNDED FEED NEED TO BE STORED IN A FRIDGE BETWEEN 2-8°C?

- Compounded parenteral nutrition is stored in the fridge for two reasons:
  1. To reduce the risk of any microbial contamination growing
     - Compounded parenteral nutrition is made from sterile ingredients in a super clean environment but there is a very small risk of microbial contamination (between 1 in 1000 and 1 in 3000). Storage in the fridge ensures that even if the solution has been exposed to microbial contamination it does not grow to levels that would cause harm.
  2. To maximise the shelf life of the product
     - The ingredients in the parenteral nutrition solution interact and start to change over time, this change happens faster at room temperature. Storing the product in the fridge slows the reactions down and keeps the product suitable for use for longer (e.g. food in fridge).
- A product should never be used after the expiry date on the label.

2 WHY DOES COMPOUNDED PN NEED TO BE STORED IN A DEDICATED FRIDGE?

- There are several reasons why PN is kept in a dedicated fridge.
- Temperature maintenance
  - A domestic fridge may be opening and closed many times a day, each time the temperature in the fridge changes and has to be cooled back down. A dedicated PN fridge would only be opened once or twice a day and this results in a more even storage temperature.
- Air circulation and stock rotation
  - Using a dedicated fridge will ensure that there is enough space for the products and the air to circulate freely to keep them at an even temperature.
- Risk of contamination
  - Keeping the PN in a dedicated fridge reduces the amount of bacterial contamination that may be on the outer surface of the bag. It is much easier to keep a dedicated fridge clean.

MYTH 3

To be continued...

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TYPES OF PRODUCTS USED IN HOME PARENTERAL NUTRITION THERAPY

Parenteral nutrition therapy is provided based on the individual needs, and can be delivered using different types of products.

NON-REFRIGERATED PRODUCTS

INTRAVENOUS FLUID BAGS

- These bags can come in lots of different types, they can be small volumes e.g. 100ml which may be used to give other nutrition components such as vitamins, or they can be larger volume e.g. 1-2L which may be used for fluid replacement or extra hydration on hot days.
- These bags are usually licensed as medicines by the MHRA* and are fully tested and sterilised by the manufacturer before they are released onto the market.
- These do not need to be stored in the fridge and will have a long shelf life (years).

MULTI-CHAMBER BAGS

- These bags are licensed medicinal products, and are fully tested and sterilised by the manufacturer before they are released onto the market.
- The seal separating the sections of the bags needs to be broken and the contents mixed together before it is infused.
- These products don't need to be stored in the fridge and the ingredients are separated into two or three chambers to give a long shelf life (years).
- If the product has two chambers one will contain a glucose solution, the other chamber contains an amino acid solution, it may contain electrolytes. If it has three chambers, the third one will contain the lipid.

ASEPTICALLY COMPOUNDED BAGS - FRIDGE STORAGE

MULTI-CHAMBER BAGS WITH ADDITIONS

- These are the licensed multi-chamber bags, either 2 or 3 chambers, that are taken into a pharmacy clean room to have extra ingredients added to them. Usually vitamins and trace elements.
- These will already have been mixed before they are delivered and will have a dispensing label on describing what has been added to the bag.
- They will have a shorter shelf life than the room temperature stored original bag.
- They must be kept in the fridge.

ASEPTICALLY COMPOUNDED BAGS FROM SCRATCH

- These are bags made specifically against an individual prescription. They are made from individual ingredients in very small batches.
- These bags are made in an aseptic environment (pharmacy clean room) either using an automated compounder or by hand with an operator drawing up each ingredient by hand and adding to each bag individually.
- These bags are made from sterile ingredients, but the bags are not sterilised after they are made and rely on the strict controls of the environment and staff training to prevent contamination of the bags as they are being made.
- The shelf life of these bags are usually 2 – 4 weeks, but can be as short as 8 days.

*MHRA - Medicines and Healthcare products Regulatory Agency

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