March 1st - "The Chronic Intestinal Failure Action Day"

A Yearly Survey through the ESPEN Database for CIF

A prospective multicenter study to know the outcome of patient with CIF

Study protocol updated at March 1st 2021

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Background

ESPEN has devised the recommendation on "definition and classification of intestinal failure in adults"(1). The document consisted of definition of IF, a functional and a pathophysiological classification for both acute and chronic IF and a clinical classification of chronic IF.
The clinical classification of CIF was intended as an instrument to facilitate communication and cooperation among professionals through an objective and easy-to-do categorization of patients. It was based on the requirements for energy and the volume of the home parenteral nutrition (HPN) supplementation, calculated as "daily mean" of the total infused per week:

In 2015, the HAN&CIF special interest group of ESPEN carried out an international cross-sectional survey to compare the HPN activity among Countries according to the ESPEN clinical classification of CIF. Sixty-five CIF centers from 22 Countries, mostly from Europe, but also from North, Central and South America, New Zealand, Australia and Israel, participated in the study. About 3.300 patients who were on HPN for CIF at March 1st 2015 were included. The study was carried out using a structured database. The results allowed: to devise a revised clinical classification of CIF(2,3); to compare the modalities of provision of HPN among countries (4); do devise a severity classification of CIF (5), to analyze the characteristics of children with CIF (6)

Considering that:

- CIF is a rare organ failure, still not well known by health care professionals and not formally recognized and adequately supported by all the national health care systems.

- The HPN supplementation and management may differ according to the pathophysiological cause, the clinical classification of CIF as well as the benign or malignant nature of the underlying disease (7,8)
- Heath care professionals, patients' associations and commercial companies are strongly interested in a database to homogenize the data collection and the clinical follow up of patients with CIF, to be used in the clinical practice, benchmarking comparison and clinical research

The experience of the ESPEN survey on CIF, has been formalized as "yearly one day worldwide data collection on CIF", called **"March 1st - CIF Action Day",** with the followings aims:

Primary aims

- To investigate the association between the ESPEN clinical classification of CIF in adults and the patient outcome concerning survival, intestinal rehabilitation, intestinal transplantation and HPN major complications
- To develop a clinical classification of CIF in children

Secondary aims

- To increase the worldwide awareness of CIF
- To provide the participating centers/units with a tool for the data collection, useful for the daily clinical practice, for the benchmarking analysis and for the clinical research

Material and Methods

A yearly prospective survey of patients on home parenteral nutrition (HPN) for CIF.

Center/Unit enrollment

- Those Centers that contributed in the ESPEN cross sectional survey on the clinical classification of CIF carried out in the previous years will be invited to participate in the ongoing year (**invited centers**)
- Centers that did not participate in the previous year will be able to participate in the study at any time (**new centers**).

Patient inclusion criteria

adults (≥ 18 years) as well as children (< 18 years) on HPN for CIF

Data collection modalities

Data have to be collected in the database, as they are observed on March 1st of each year

a. **Invited centers** have to **update** the patients "**who were on HPN**" on March 1st of the previous year and have to include in the database all the patients **"who started HPN"**

between March 2nd of the previous year and March 1st of the current year of data collection .

b. **New centers** have to **include** in the database all the patients **"who currently are on HPN**"

c. **June 30th**, deadline to return the filled out database to espencifday@gmail.com

d. **Invited centers will receive back their database with the data of the previous years**, to be updated with the follow up data at March 1st of the current year, and to include new patients who started HPN between March 2nd of the previous year and March 1st of the current year of data collection

e. **New Centers** will receive **the database for the patient enrollment, upon request** by email to espencifday@gmail.com

Items to be collected

The items are divided in two categories:

- **Mandatory section:** the collection of these data is obligatory for the participation in the study
- **Optional section:** the collection of these data is not obligatory, even thought highly recommended, for the participation in the study

Data collection for the participation in the study:

- **Patient characteristics**
  - Gender
  - Date of birth "and/or" age at the date on first inclusion in the study
  - Height
  - Weight

- **CIF characteristics**
  - Mechanism
  - Underlying disease
  - Clinical classification

- **Present nature of the disease:**
  - active malignant cancer
  - benign disease (absence of cancer, excepting invasive intra-abdominal desmoid disease, because of the chronic nature of the condition and reflecting the fact that it is an established indication for intestinal transplantation)

- **HPN program characteristics**
  - Date of starting "and/or" duration of HPN at the date on first inclusion in the study
  - Provider
  - PN-admixture types
  - PN-admixtures volume and energy

Legend for PN-admixture 1, PN-admixture 2, PN-admixture 3, PN-admixture, if other PN-admixture
Include the ongoing intravenous supplementation at March 1st of each year of data collection; as some patients may infuse more than one type of PN-admixture (ie. admixture without lipids for 3 days a week and admixture with lipids for 2 days a week; admixture with macronutrients for 4 days a week and fluid-electrolytes alone for 4 days a week), more than one description are allowed.

For each PN-admixture (1,2,3,..), the followings are required:

- Volume (mL) = volume per day of infusion
- Total energy (kcal) = total energy (glucose+lipids+aminoacids) per day on infusion
- Days of infusion per week (n) = the number of days each PN-admixture (1,2,3,..) is infused during a week

Types of PN Admixtures

- **premixed admixture (PA)** = commercially available premade (premixed) parenteral nutrition admixture
- **premixed admixture plus extra fluids and/or electrolytes (PAFE)** = infusion of saline and/or other electrolyte solutions in addition to the premixed parenteral nutrition admixture
- **fluids-electrolytes alone (FE)**
- **customized admixture (CA)** = PN admixture compounded according to the single patient needs
- **customized admixture plus extra fluids and/or electrolytes (CAFE)** = infusion of saline and/or other electrolytes solutions in addition to the customized parenteral nutrition admixture

- **Patient outcome**
  - Still on HPN (treatment):
    - on standard treatment
    - on intestinal growth factor
    - after intestinal transplantation
  - Weaned off HPN (date and reason):
    - spontaneous adaptation
    - non-transplant surgery
    - intestinal growth factors
    - intestinal transplantation
  - Deceased (date and primary cause):
    - HPN complication (type):
      - CVC-sepsis
      - CVC-related central vein thrombosis
      - IFALD-related liver failure
      - other (specify ...)
    - underlying disease complication (type):
      - gastrointestinal disease (specify ...)
      - systemic disease (specify ...)
      - post-transplant complication (specify ...)
      - other (specify…)
  - Lost to follow up

- HPN major complications in the previous 12 months (IFALD-related cholestasis or liver failure and/or CVC-related central vein thrombosis and/or CVC-related bloodstream infection):
  - no
  - yes

- **Oral/enteral nutrition**
  - Total fasting
  - Only water
  - Only clear beverages
  - Only enteral formula
  - Only milk formula (children)
  - Breast feeding (children)
  - Small amount of food & beverage
  - Free food & beverage

Characteristics of the major HPN complications in the previous 12 months:

- **Intestinal failure-related liver disease (IFALD)**
  - Cholestasis : total bilirubin > 1 mg/dL (>17.1 μmol/L) and direct bilirubin > 0.3 mg/dL (>5.2 μmol/L)
  - Impending liver failure: total bilirubin > 3 mg/dL (>54.3 μmol/L) with direct bilirubin above the upper normal value, progressive thrombocytopenia and splenomegaly
  - Overt liver failure: portal hypertension hepatosplenomegaly, hepatic fibrosis or cirrhosis
- **CVC-related central vein thrombosis**
  - Pre-existing or new event
  - n. of occluded veins
  - type of occluded veins
- **CVC-infections CRBSI (diagnosed according to local practice)**
  - n. of episodes
  - Types of micro-organism

Ethical Committee approval

Each participating center/unit will follow the local rules

Modalities to inform the ESPEN community about the "CIF day":

- Information to the ESPEN Council members
- Email to those Centers that already contributed to the 2015 CIF cross-sectional survey
- ESPEN newsletter

Database production and statistical analysis: Department of Medical and Surgical Sciences of the University of Bologna, Italy on behalf of

Database property: ESPEN

Data discussion, yearly presentation at the ESPEN Congresses and manuscript submission: by the HAN&CIF group

Data property: each participating center will be allowed to use their own data for any individual center clinical or research activity; centers have to quote the ESPEN DATABASE in the method section; ESPEN will have the property of the global data

Authorship rules

First Author: the study coordinator

Second and last Authors: the coordinators of the Centers that will enroll the greatest and second greatest number of patients (who will be the second and the last one, to be agreed)

Other co-Authors between the second and the last: in order of the number of patients enrolled (from greatest to smallest)

Intellectual property of the study protocol: the Home Artificial Nutrition & Chronic Intestinal Failure special interest group of ESPEN

References

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2. Pironi L, et Home Artificial Nutrition & Chronic Intestinal Failure of ESPEN. Clinical classification of adult patients with chronic intestinal failure due to benign disease: an international multicenter cross-sectional survey. Clin Nutr. 2018 Apr;37(2):728-738.
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