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Effect of an enteral diet enriched with gamma linolenic acid, eicosapentaenoic acid and antioxidants upon the course of critically ill patients with sepsis

Submission date
21/11/2009

Recruitment status
No longer recruiting

Registration date
03/12/2009

Overall study status
Completed

Last Edited
05/04/2012

Condition category
Infections and Infestations

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Scientific

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Additional identifiers

Protocol serial number
GTMYN/SEMICYUC /01 2002

Study information

Scientific Title
Effect of an enteral nutrition enriched with eicosapentaenoic acid, gamma-linolenic acid and anti-oxidants on the outcome of mechanically ventilated critically ill septic patients: a phase IV prospective multicentre randomised controlled parallel-group study

Study objectives
To determine whether an enteral diet enriched with gamma-linolenic acid, eicosapentaenoic acid and antioxidants is able to reduce the percentage of septic patients who develop at least one organic failure (new) during admission to the Intensive Care Unit (ICU) by at least a 20% (absolute terms) with respect to the control group (isocaloric and isonitrogenous standard enteral diet).

Ethics approval required
Old ethics approval format

Ethics approval(s)
Hospital de Leon Ethics Committee approved on the 9th December 2003 (ref: 33/03)

Study design
Phase IV prospective multicentre randomised simple-blind controlled parallel-group study

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Systemic inflammatory response syndrome (SIRS)

Interventions
Patient allocation:
Patients were randomly allocated to receive the control or the study product. A minimisation technique, where two stratification factors will be taken into account: site and severity of sepsis. Selected randomisation procedure guarantees that treatment arm cannot be predicted by the investigator.

Products:
The study product and comparator will be commercial products:
Control product: Isocaloric and isonitrogenous standard enteral diet. Commercial product: Ensure Plus HN in 500 mL RTH container (Ross Products Division of Abbott Laboratories, Spain)
Study product: A low-carbohydrate, calorically dense liquid food (containing EPA, GLA and antioxidants)
Commercial product: Oxepa (Ross Products Division of Abbott Laboratories, Spain) manufactured in Zwolle, The Netherlands for global distribution. Recommended rate for Oxepa is to begin full strength feeding at 20 - 30 ml/hr and increase by 10 ml every 8 hours until the goal rate is reached.

Doses:
To calculate the total caloric daily intake to be given by EN, caloric needs were set 25 kcal/kg /day and protein intake of 1.5 g/kg/day, adjusting by ideal body weight for obese patients.

Minimal required intake (at least 70% of the calculated dose) must be administered within 96 hours since the patient enters the study.

Administration:
Enteral nutrition will be administered continuously with an infusion pump during 24 hours, through nasoenteral (gastric or pyloric) or transpiloric gavage. For its maintenance and efficacy, recommendations of the Nutritional and Metabolic Working Group of the Spanish Society of Intensive Care Medicine and Coronary Units, published in the journals Medicina Intensiva and Nutrición Clínica, will be followed. These procedures have already been tested in two large epidemiological trials, the COMGINE trial and the ICOMEP, the second one not published yet. Both trials confirm homogeneity in EN procedures between the ICUs that will take part in the study.

Treatment duration:
The duration of treatment will be at least 5 days, counting from the time of randomisation until the end of the septic condition. The septic episode will be considered over when the patient does not meet the criteria for sepsis for 72 consecutive hours. No changes in regimen are considered during the study, except in cases of complications. All concomitant treatments (co-interventions) should be reflected in an easily legible manner for eventual review by the study monitor.

Transfusion policy:
Transfusion treatment is considered to be unrestricted and will be dealt with simply as another covariable (conventional versus restrictive transfusion). To this effect, the haemoglobin concentration prior to each transfusion will be recorded in the CRF.

The rest of supportive treatments usually used in daily care - including antibiotic or antifungal therapy and the different mechanical ventilation protocols - can be freely used according to criterion in each centre, though also in this case the CRF should document some variables of interest according to the prior experience of the group. The rest of supportive treatments are usually used in daily care, including antibiotics and vasoactive drugs, and the different mechanical ventilation protocols used followed the Survival Sepsis Campaign guidelines.

Intervention Type
Drug

Phase
Phase IV

Drug/device/biological/vaccine name(s)
Gamma linolenic acid, eicosapentaenoic acid, antioxidants

Primary outcome(s)
Number of new organ failures during admission to the ICU measured by changes in delta-Sequential Organ Failure Assessment (SOFA) score, measured at days 1, 3, 7, 14 and 21.

Key secondary outcome(s))
1. Number of stays in the ICU
2. Number of days of mechanical ventilation
3. Incidence of nosocomial infection (incidence density) throughout the stay in the ICU
4. Overall all-cause mortality (cumulative incidence on day +28)

5. Overall mortality during admission to the ICU
6. Overall mortality on day +180 from admission to the ICU

Completion date
31/12/2007

Eligibility

Key inclusion criteria
Eligible patients are defined as those subjects who satisfy ALL of the following:
1. Aged 18 years or older, either sex
2. A diagnosis of sepsis during admission to the ICU, without the provision of artificial nutrition in the minimum required amount
3. An indication for enteral nutrition
4. Patient registration in the Secretariat before the start of treatment
5. Informed consent for participation in the study

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 years

Sex
All

Key exclusion criteria
Patients who present any of the following will NOT be eligible for inclusion in the study:
1. Established pregnancy
2. The reception of artificial nutrition in the 15 days prior to inclusion in the study
3. Known food allergy to any of the study diet components
4. Severe hyperlipidemia and hypertriglyceridemia
5. Gastrointestinal diseases precluding enteral nutrition (surgical resections, malabsorption, exacerbated inflammatory disease, persistent ileus, active upper digestive bleeding, etc.)
6. The impossibility of positioning the enteral nutrition tube
7. Immune depression, defined as:
7.1. Neutropenia (less than 1 x 10^9 neutrophils/l), or a prior diagnosis of myelodysplastic syndrome
7.2. Congenital immune deficiencies or acquired immune deficiency syndrome (AIDS) (Center for Disease Control and Prevention [CDC] criteria)
7.3. Systemic immunosuppressor therapy (including corticosteroids at prednisone equivalent doses of 1 mg/day or more) in the last 3 months
7.4. Systemic chemotherapy in the last 3 months
7.5. Autologous haematopoietic precursor cell transplantation in the previous year

7.6. Allogenic haematopoietic precursor cell transplantation in the last 2 years, or the existence of chronic graft versus host disease
8. Advanced chronic diseases:
8.1. Stage C chronic liver disease (Child Pugh)
8.2. Grade IV heart failure (New York Heart Association [NYHA])
8.3. Functional grade IV chronic respiratory failure
8.4. End stage degenerative neurological processes
8.5. End stage kidney failure
8.6. Neoplasms, either relapsing or in progression under treatment
9. Short life-expectancy processes:
9.1. Shock of any aetiology with multi-organ failure refractory to therapy in the first 48 hours
9.2. Fulminant acute hepatitis
9.3. Ischaemic haemorrhagic cerebrovascular accidents or head injuries with endocranial hypertension not controlled within 72 hours
9.4. Cardiogenic shock not overcome after 72 hours of specific treatment
9.5. Incoercible or recurrent serious acute haemorrhage for greater than 72 hours
9.6. Haemostatic disorders not controlled after 72 hours of specific treatment
9.7. Post-cardiopulmonary resuscitation with serious neurological damage 72 hours after arrest
10. Severe acute pancreatitis (except if infection is confirmed)
11. Administration of some experimental treatment in the past month, or present inclusion in another clinical study

Date of first enrolment
01/01/2004

Date of final enrolment
31/12/2007

Locations

Countries of recruitment
Spain

Study participating centre
Intensive Care Department
Leon
Spain
24071

Sponsor information

Organisation
Spanish Society of Intensive Care (Sociedad Española de Medicina Intensiva) (Spain)

Funder(s)

Funder type
Industry

Funder Name
Abbott Laboratories (Spain) - provided freely to investigators the study and control products.

Funder Name
Please note Abbott Laboratories will not be involved in data acquisition, analysis and publication of this study. The final report will be jointly prepared by all the members of the Data Review and Publication Committee. Abbott Laboratories, S.A. will have the right to conduct a complementary analysis and express its point of view to the Committee through a representative - without this implying any restriction in the final decision of the mentioned control organism. The authorship criteria will be those currently considered by the Metabolism and Nutrition Work Group of the Spanish Society of Intensive Care Medicine. The conclusions of the study will be obligatorily submitted for publication - regardless of the results obtained.

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not provided at time of registration

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	01/09/2006		Yes	No
Results article	results	01/10/2011		Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes