

Nutritional support algorithm for critically ill patients

Submission date 20/04/2016	Recruitment status No longer recruiting	<input type="checkbox"/> Prospectively registered <input checked="" type="checkbox"/> Protocol
Registration date 26/05/2016	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 14/06/2023	Condition category Nutritional, Metabolic, Endocrine	<input checked="" type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Nutritional support is of vital importance for patients being treated in the intensive care unit (ICU) patients. These critically ill patients are at risk of not having adequate nutrition. Clinicians, for example, may delay enteral nutrition support due to the nature of the critical illness or after a patient has undergone major surgery. However, there is evidence that giving enteral nutrition early (that is, nutrition administered directly to the digestive system, for example into the stomach through a feeding tube) on is beneficial for a variety of reasons, such as reduced risk of developing ventilator associated pneumonia, protecting the enteral mucus (lining of the digestive system) and even a reduced risk of death while in hospital. However, it is not known at present how enteral nutrition support using a structured algorithm would benefit the critically ill. The study is designed to investigate this and provide evidence for using such a structured algorithm.

Who can participate?

Critically ill patients expected to stay in ICU for more than 3 days.

What does the study involve?

Participants are randomly allocated into one of two groups. Those in group 1 (intervention group) are provided enteral nutrition support via the structured algorithm. Those in group 2 (control) are not provided enteral nutrition support via the structured algorithm. All participants are followed up for the next 28 days, or until death, assessing them to see whether they develop ventilator associated pneumonia, for example, how long they require mechanical ventilation and the amount of nutrition they receive.

What are the possible benefits and risks of participating?

Participants in the intervention group may be more likely to receive adequate enteral nutrition earlier than they may otherwise have done.

Where is the study run from?

A total of ten hospitals in Zhejiang, China

When is the study starting and how long is it expected to run for?
April 2016 to December 2016

Who is funding the study?
Zhejiang Provincial People's Hospital (China)

Who is the main contact?
1. Dr Renhua Sun (scientific)
zjpphicu@126.com
2. Dr Zhongheng Zhang (scientific)
zh_zhang1984@hotmail.com

Contact information

Type(s)
Scientific

Contact name
Dr Renhua Sun

Contact details
158#, Shangtang Road
Hangzhou
China
310014
+86 (0)571 85893281
zjpphicu@126.com

Type(s)
Scientific

Contact name
Dr Zhongheng Zhang

Contact details
351#, Mingyue Street
Jinhua, Zhejiang,
China
321000
+86 (0)579 82553393
zh_zhang1984@hotmail.com

Additional identifiers

Protocol serial number
N/A

Study information

Scientific Title

Effectiveness of nutritional support algorithm on outcomes for critically ill patients

Study objectives

We hypothesized that the use of a enteral nutritional support algorithm would improve clinical outcomes for critically ill patients

Ethics approval required

Old ethics approval format

Ethics approval(s)

Ethics committee of Zhejiang Provincial People's Hospital, 27/04/2016, ref: 2016JS001

Study design

Interventional non-randomised study

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Enteral feeding

Interventions

This study is evaluating an enteral nutritional support algorithm.

Critically ill patients are randomly allocated to one of two groups:

1. Those fed though the enteral nutritional support algorithm (intervention)
2. Those for which there is no protocol for enteral feeding (control)

The nutritional support algorithm is as follows:

1. Enteral feeding is considered when the subject is hemodynamically stable and fulfills the criteria

1.1. Mean arterial blood pressure > 65 mmHg

1.2. Serum lactate <4 mmol/l; and norepinephrine infusion rate <12.5 mcg/min

2. Then the gastrointestinal function is assessed and categorized as follows:

2.1. Normal function

2.2. Acute gastrointestinal injury grade 1-3

2.3. Contraindications for enteral feeding such as ischemic bowel disease, perforation, obstruction and AGI grade 3

Enteral feeding of 25 ml/hr is started for participants in category 2.1.

Enteral feeding at rate of 10-15 ml/hr is started for participants in category 2.2.

Total parenteral nutrition support is started for participants in category 2.3.

Patients are followed for 28 days after randomization or until death, depending on which occurs first. They are not followed up after conclusion of the study.

Intervention Type

Other

Primary outcome(s)

28-day mortality

Key secondary outcome(s)

1. Incidence of ventilator associated pneumonia
2. Length of stay in ICU and hospital
3. Duration of mechanical ventilation
4. Biomarkers of nutritional status, including albumin, pre-albumin, chemistry profile, CD3, CD8, IgA, IgG, HLA-DR. They are measured via blood samples taken on a daily basis after enrollment into the study
5. Total amount of nutrition and the proportions of enteral and parenteral nutrition, measured by summing up calories intakes for the whole study period. Calories include enteral nutrition (commercial formula with fixed calorie per unit volume), and parenteral nutrition

Completion date

18/12/2016

Eligibility**Key inclusion criteria**

Critically ill patients expected to stay in ICU for more than 3 days

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Sex

All

Key exclusion criteria

1. Previous EN within 7 days of current episode of ICU admission
2. Burn patients
3. Pregnancy and breast feeding
4. Patients with PEJ, PEG

Date of first enrolment

05/05/2016

Date of final enrolment

18/12/2016

Locations

Countries of recruitment

China

Study participating centre

Zhejiang Provincial People's Hospital

Zhejiang

China

310000

Study participating centre

Zhejiang Provincial TCM Hospital

China

310000

Study participating centre

Huzhou Central Hospital

198 Hongqi Rd

Wuxing

Huzhou

Zhejiang

China

-

Study participating centre

Shaoxing People's Hospital

No.568, Zhongxing North Road

Shaoxing

Zhejiang

China

-

Study participating centre

YiWu Central Hospital

No.699,Jiangdong Road

Yiwu

Zhejiang

China

-

Study participating centre

NingBo First Hospital

No.59, LiuTing Street

NingBo

Zhejiang

China

-

Study participating centre

TaiZhou Hospital

No.150, Ximen Street

Taizhou

Zhejiang

China

-

Study participating centre

QuZhou People's Hospital

2 Zhouloudi

Quzhou 324000

Zhejiang

China

-

Study participating centre

LiShui People's Hospital

NO.15, LiShui City

Zhejiang

China

-

Study participating centre

Jinhua Municipal Central Hospital

351#, Mingyue Street

Jinhua

Zhejiang

China

-

Sponsor information

Organisation

Zhejiang Provincial People's Hospital

ROR

<https://ror.org/03k14e164>

Funder(s)

Funder type

Hospital/treatment centre

Funder Name

Zhejiang Provincial People's Hospital

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary

Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article	results	03/08/2017		Yes	No
Protocol article	protocol	01/08/2016		Yes	No
Dataset	Participant information sheet		14/06/2023	No	No
Participant information sheet		11/11/2025	11/11/2025	No	Yes