

Clinical study of the effect of oral administration of magnesium threoninate (L-TAMS) in morphine analgesia and tolerance

Submission date 11/01/2018	Recruitment status No longer recruiting	<input checked="" type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
Registration date 24/01/2018	Overall study status Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
Last Edited 14/02/2024	Condition category Signs and Symptoms	<input type="checkbox"/> Individual participant data

Plain English summary of protocol

Background and study aims

Intractable cancer pain is a difficult medical problem. The drug morphine has emerged as a key treatment option for pain relief. Morphine is the main method of controlling cancer pain, but repeated morphine use lead to tolerance and the need to increase the dose for satisfactory results. A high dose of morphine could induce constipation, respiratory depression (slow and ineffective breathing), skin itching and other side effects. The aim of this study is to assess the effectiveness of magnesium threoninate (L-TAMS) on cancer pain in patients treated with morphine, to see whether it prevents morphine tolerance.

Who can participate?

Patients aged 18 to 80 years with cancer pain being treated with morphine

What does the study involve?

Participants are randomly allocated to two groups. Those in group 1 are given magnesium threonate (L-TAMS) for 12 weeks. Those in group 2 are given a placebo (dummy drug) for 12 weeks. Both groups are also treated with morphine. The pain experienced after treatment is assessed for each patient every day for the next 3 months.

What are the possible benefits and risks of participating?

The possible benefits are that participant could have better pain relief. The main possible risk is a side effect of magnesium threoninate (L-TAMS).

Where is the study run from?

Xinhua Hospital (affiliated with Shanghai Jiaotong University School of Medicine) (China)

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

February 2018 to July 2019

Who is funding the study?

Xinhua Hospital (affiliated with Shanghai Jiaotong University School of Medicine) (China)

Who is the main contact?

Prof. Ke Ma

Contact information

Type(s)

Scientific

Contact name

Prof Ke Ma

Contact details

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Additional identifiers

Protocol serial number

XINHUA2018-01

Study information

Scientific Title

Clinical trial of the effect of oral administration of magnesium threoninate (L-TAMS) in morphine analgesia and tolerance

Study objectives

1. Oral administration of magnesium threoninate (L-TAMS) is safe for intractable cancer pain patients.
2. The oral administration of magnesium threoninate (L-TAMS) can improve quality of life, enhance morphine analgesia, and prevent and inhibit morphine tolerance

Ethics approval required

Old ethics approval format

Ethics approval(s)

Xinhua Hospital Ethics Committee Affiliated to Shanghai Jiaotong University School of Medicine, 26/12/2017, ref: XHEC-C -2017-106

Study design

Single-center double-blinded randomized controlled clinical study

Primary study design

Interventional

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Cancer pain

Interventions

98 participants are randomly allocated to two groups. Those in group 1 (n = 49) are given magnesium threonate (L-TAMS) 1.5 g/day for 12 weeks. Those in group 2 (n = 49) are given placebo 1.5 g/day for 12 weeks. Both groups are treated with morphine. The pain experienced after treatment is assessed for each patient every day for the next 3 months.

Intervention Type

Drug

Phase

Not Applicable

Drug/device/biological/vaccine name(s)

Magnesium threonate (L-TAMS)

Primary outcome(s)

1. Pain, measured using the visual analogue score (VAS) every day during the treatment. The frequency and intensity of the pain outbreak every day during the treatment
2. The dosage of morphine per day during the treatment

Key secondary outcome(s)

1. Intensity of anxiety, measured using the PHQ-9 evaluation scale every day during the treatment
2. Intensity of depression, measured by the GAD-7 anxiety screening scale) every day during the treatment
3. Quality of life, measured by the quality of life score (QOL) every day during the treatment

Completion date

31/07/2019

Eligibility

Key inclusion criteria

1. Subjects voluntarily signed the informed consent
2. Patients suffering from cancer pain with treatment of morphine, aged from 18 to 80 regardless of gender
3. Survival time is expected to exceed 3 months
4. Moderate to severe pain, VAS >4 points or more, or outbreak of pain >3 times/day
5. Patients can follow the drug dose and follow-up plan
6. Patients can describe the symptoms, no serious infection, respiratory insufficiency and has the ability to cooperate
7. Non-allergic persons
8. No drug abuse or drug addiction
9. Non-lactating, pregnant women. Subjects who did not have a pregnancy plan within 1 month after the test
10. Patients did not participate in a drug test within 3 months before this test (including the test drug)

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 years

Sex

All

Total final enrolment

116

Key exclusion criteria

1. Researchers think that there is any reason they can't be included
2. In poor situation, severe systemic infection or respiratory dysfunction and uncooperative
3. Suffering from severe respiratory system, cardiovascular system diseases, liver and kidney dysfunction, cancer
4. Patients who are allergic to magnesium threonate (L-TAMS)
5. Patient who has a history of drug abuse
6. Breastfeeding, gestational women or subjects who do not have a pregnancy plan within 1 month after the test
7. Patients who participated in a drug trial within 3 months before this trial
8. Patients does not meet the inclusion criteria

Date of first enrolment

01/02/2018

Date of final enrolment

31/01/2019

Locations**Countries of recruitment**

China

Study participating centre

Pain Management Centre, Xinhua Hospital (affiliated with Shanghai Jiaotong University School of Medicine)

China

200092

Sponsor information

Organisation

Xinhua Hospital (affiliated with Shanghai Jiaotong University School of Medicine)

ROR

<https://ror.org/04dzvks42>

Funder(s)

Funder type

Hospital/treatment centre

Funder Name

Xinhua Hospital (affiliated with Shanghai Jiaotong University School of Medicine)

Results and Publications

Individual participant data (IPD) sharing plan

The data sharing plans for the current study are unknown and will be made available at a later date.

IPD sharing plan summary

Data sharing statement to be made available at a later date

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		26/01/2023	14/02/2024	Yes	No
Participant information sheet	Participant information sheet	11/11/2025	11/11/2025	No	Yes