ISRCTN54990932 https://doi.org/10.1186/ISRCTN54990932

To evaluate hydroxyurea and imatinib treatment for chronic myeloid leukemia

Submission date
11/01/2016

Recruitment status
No longer recruiting

Registration date
14/01/2016

Overall study status
Completed

Last Edited
01/11/2017

Condition category
Cancer

[ ] Prospectively registered
[ ] Protocol
[ ] Statistical analysis plan
[ ] Results
[ ] Individual participant data
[ ] Record updated in last year

Plain English summary of protocol

Background and study aims
Chronic myeloid leukemia (CML) is a cancer in which the bone marrow makes too many white blood cells. These cells are called granulocytes or leukemia cells; they are abnormal and do not become healthy white blood cells. The leukemia cells can build up in the blood and bone marrow so there is less room for healthy white blood cells, red blood cells, and platelets. When this happens, infection, anemia, or easy bleeding may occur. Most people with CML have a gene mutation (BCR-ABL gene) called the Philadelphia chromosome. The goal of treatment is to eliminate the blood cells that contain the abnormal BCR-ABL gene. For most patients, it's not possible to get rid of all leukemia cells, but treatment can help achieve a long-term remission of the disease. Current treatment choices include: targeted drugs like Imatinib (Gleevec), blood stem cell transplant, chemotherapy, and biological therapy. Each treatment option has its own advantages and disadvantages. The prognosis for patients with advanced CML is usually poor, as the treatments available to these patients often do not work. Hydroxyurea is a type of chemotherapy drug called an antimetabolite. Antimetaboloites work by stopping cells making and repairing DNA; cancer cells need to do both these things in order grow and multiply. However, hydroxyurea may also cause the number of bone marrow blood cells to fall to a very low number. This increases the risk of serious bleeding and infection. It may also cause other cancers, including skin cancer. In light of how well hydroxyurea works and its side effects, it may be possible for patients to not take it for as long and still get the same amount of benefit from the treatment. Imatinib is a type of biological therapy called a tyrosine kinase inhibitor. Tyrosine kinases are proteins that act as chemical messengers that cells use to signal to each other to grow. Imatinib works by blocking certain types of tyrosine kinases. This stops the cancer cells from growing. The dose (amount) of Imatinib given to CML patients is usually high and given for the rest of the patients life. Side effects can include swelling or puffiness of the skin, nausea, muscle cramps, rash, fatigue, diarrhea, and skin rashes. In addition to this, patients may not respond or become resistant to the drug. This study looks at treating CML patients with hydroxyurea for a very short period of time (usually 3 to 7 days) to stop the growth of leukemia cells and then a much reduced dose of Imatinib. It is hoped that the combined function of these two drugs will significantly reduce the dose that patients need to take, improve the patients quality of life, improve both liver and kidney function, reduce drug side effects and decrease the risk of drug resistance.

Who can participate?
Patients diagnosed with CML.

What does the study involve?
All participants are treated with hydroxyurea combined with imatinib. Samples of blood and bone marrow are taken and tested every 6 months to test for progression of the disease. All participants are given the treatment for the rest of their lives and are followed up every 6 months for at least 5 years or until their death.

What are the possible benefits and risks of participating?
Not provided at time of registration

Where is the study run from?
First Affiliated Hospital of Harbin Medical University (China)

When is the study starting and how long is it expected to run for?
May 2003 to December 2024

Who is funding the study?
National Natural Science Foundation of China

Who is the main contact?
Professor Jin Zhou
zhoujin1111@126.com

Contact information

Type(s)
Scientific

Contact name
Prof Jin Zhou

Contact details
Department of Hematology
First Affiliated Hospital
Harbin Medical University
Harbin
China
150001
+86 (0) 451 53641824
zhoujin1111@126.com

Additional identifiers

EudraCT/CTIS number

IRAS number

ClinicalTrials.gov number

Secondary identifying numbers
2004-08-CHN

Study information

Scientific Title
Prospective study on an effective treatment for chronic myeloid leukemia with hydroxyurea and imatinib

Study objectives
Short period use of hydroxyurea combined with low-dose imatinib function cooperatively will improve the clinical outcome for chronic myeloid leukemia (CML) patients during treatment at accelerated phase and blastic phase.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Harbin Medical University Ethics Committee, 3/20/2002, ref: HM011502.

Study design
Interventional

Primary study design
Interventional

Secondary study design
Non randomised study

Study setting(s)
Hospital

Study type(s)
Treatment

Participant information sheet
The patient information sheets are available at the First Affiliated Hospital at Harbin Medical University

Health condition(s) or problem(s) studied
Chronic myeloid leukemia (CML)

Interventions
Chronic myeloid leukemia (CML) patients who give written consent are enrolled. First stage is to control leukocytosis, which includes daily oral hydroxyurea 1-3 g for 3-7 days. A total of three treatment cycles are repeated with 2-week intervals until leukocytosis is well controlled. For CML cell elimination therapy, oral imatinib of 200-600 mg/day is maintained for life. Blood and bone marrow cell study, biopsy, and cytogenetics are tested once every 6 months. The total duration of treatment is life time, and follow-up for all treatment arms is from diagnosis, then once every 6 months, until death or 5 years and beyond.

Intervention Type
Mixed

Primary outcome measure
1. Overall survival (OS): It is calculated from the start of the treatment until the last follow up or death
2. Disease-free survival (DFS): It is calculated as time of MR until the last follow-up, relapse, death from any cause, or occurrence of severe side effects.

Assessed with an interval of every 6 months clinical follow up.

Secondary outcome measures
1. Complete hematologic remission (CHR) - Normal complete blood count and normal physical examination
2. Complete cytogenetic remission (CCR) - Normal chromosome examination with no Ph positive cells detectable on metaphase cytogenetic of bone marrow with 20-25 cells analyzed
3. Molecular remission (MR) - Negative RT-PCR evidence of the BCR-ABL mRNA

All measured with clinical examination, peripheral blood test, bone marrow cell count, cytogenetic study, FISH, and QRT-PCR at an interval of 3 months

4. Quality of life (QOL) – Using “Professional Quality of Life Scale” at each 6 month clinical follow up visit

Overall study start date
01/05/2003

Completion date
31/12/2024

Eligibility

Key inclusion criteria
1. Any age CML patients at different disease stages, who are responsive or non-responsive to conventional treatments are all included in this trial
2. Patients agreed to receive the treatment

Participant type(s)
Patient

Age group
All

Sex
Both

Target number of participants
2000

Key exclusion criteria

1. Previous history of severe cardiovascular disease (coronary arterial disease, stroke, etc.)
2. Severe chronic disease with poor prognosis (liver disease, kidney disease, etc.)
3. Illegal drug use or chronic alcoholism
4. Physical limitations, mental or intellectual disabilities
5. Any condition that may affect the development of this trial

Date of first enrolment
01/05/2003

Date of final enrolment
30/01/2024

Locations

Countries of recruitment
China

Study participating centre
First Affiliated Hospital of Harbin Medical University
Department of Hematology
First Affiliated Hospital
Harbin Medical University
Harbin
China
150001

Sponsor information

Organisation
Heilongjiang Institute for Hematology and Oncology Research

Sponsor details
c/o Zhuo Zhang
100 Longjiang St.
Bldg 5
Harbin
China
150001
+86 (0) 451 53670428
zhuobenz0@gmail.com

Sponsor type
Hospital/treatment centre

Funder(s)

Funder type
Research organisation

Funder Name
National Natural Science Foundation of China

Alternative Name(s)
Chinese National Science Foundation, Natural Science Foundation of China, National Science Foundation of China, NNSF of China, NSF of China, , National Nature Science Foundation of China, Guójiā Zìrán Kēxué Jījīn Wěiyuánhuì, NSFC, NNSF, NNSFC

Funding Body Type
Government organisation

Funding Body Subtype
National government

Location
China

Funder Name
China 863 Projects Foundation, No. 2012AA020903 (China)

Results and Publications

Publication and dissemination plan
Data are collected and analyzed on a yearly basis, from which two articles are expected to be published in English in peer-reviewed SCI journal(s) in 2016 and 2026.

Intention to publish date
31/12/2025

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Available on request