

# To evaluate hydroxyurea and imatinib treatment for chronic myeloid leukemia

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<b>Registration date</b> 14/01/2016	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input type="checkbox"/> Results
<b>Last Edited</b> 01/11/2017	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data <input type="checkbox"/> 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. Antimetabolites 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

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## Contact information

**Type(s)**

Scientific

**Contact name**

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**Contact details**

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## Additional identifiers

**Protocol serial number**

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

**Study type(s)**

Treatment

**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(s)**

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.

**Key secondary outcome(s)**

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

#### **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

#### **Healthy volunteers allowed**

No

#### **Age group**

All

#### **Sex**

All

#### **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

## 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 Wěiyuánhùi, , 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

## Individual participant data (IPD) sharing plan

### IPD sharing plan summary

Available on request