

Granulocyte colony-stimulating factor (G-CSF) and liver regeneration in patients with alcoholic steatohepatitis

Submission date

28/02/2008

Recruitment status

No longer recruiting

Registration date

14/03/2008

Overall study status

Completed

Last Edited

30/12/2020

Condition category

Nutritional, Metabolic, Endocrine

☐ Prospectively registered

☐ Protocol

☐ Statistical analysis plan

☒ 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

Swissmedic 2005DR2212

Study information

Scientific Title

Granulocyte colony-stimulating factor (G-CSF) induces proliferation of hepatic progenitors in alcoholic steatohepatitis: a randomized trial

Study objectives

Liver failure is a major cause of death in patients with alcoholic steatohepatitis. Many patients are not candidates for liver transplantation, and no therapy has proven useful to promote liver regeneration. Granulocyte colony stimulating factor (G-CSF) showed promising results in ischemic heart disease in the repopulation of the parenchyma by pluripotent cells issued from the bone marrow following a mobilization course by G-CSF.

Hypothesis:

The effects of a 5-day course of G-CSF in patients with alcoholic steatohepatitis associated with cirrhosis is well tolerated and is associated with signs of liver cell proliferation in the short-term.

Ethics approval required

Old ethics approval format

Ethics approval(s)

Protocol N°05-089 approved by the local Ethics Committee of the University Hospital of Geneva (Hôpitaux Universitaires de Genève, Comité Départemental d'Éthique de Médecine Interne et Médecine Communautaire, 24, Rue Micheli-du-Crest, CH-1211 Genève, Switzerland). Date of approval: 14/06/2005

This study was also approved by the Swiss Agency for therapeutic products (Swissmedic)(ref: 2005DR2212)

Primary study design

Interventional

Study design

Single-center randomized controlled pilot trial (not blinded).

Study type(s)

Treatment

Health condition(s) or problem(s) studied

Alcoholic steatohepatitis

Interventions

Thirteen patients were randomized to standard care + G-CSF, and 11 patients to standard care only. The random allocation of participants to the two arms of the study were carried out using the sealed envelope technique by an independent nurse.

Baseline assessments (both intervention and control arms):

1. Patients had a transjugular liver biopsy as part of the diagnostic work-up of decompensated alcoholic liver disease.
2. Physical examination, blood sampling for routine values (coagulation, blood chemistry and liver function tests) and cytokines measurements: alpha-fetoprotein (AFP), hepatocyte growth factor (HGF)
3. Measurement of CD34+ hematopoietic stem cells (flow cytometry)
4. Aminopyrine breath test (microsomal liver function)

5. Immunohistochemistry for CK7 and Ki67 (identification of hepatic progenitor cells with proliferative activity)

Patients randomized to G-CSF: Mobilization course by G-CSF (10 mcg/kg/day) for 5 days.

Assessments for both arms at day 7:

1. Repeat liver biopsy with similar immunohistochemistry studies
2. Physical examination
3. Repeat routine blood tests and cytokines
4. Measurement of CD34+ hematopoietic stem cells (flow cytometry)
5. Aminopyrine breath test

Assessments for both arms at day 28 visit:

1. Physical examination
2. Routine blood tests and cytokines

Both arms at day 90:

Clinical outcome

Intervention Type

Other

Phase

Not Specified

Primary outcome(s)

Ability of G-CSF to increase circulating CD34 + cells (see Interventions for timepoints of assessment)

Key secondary outcome(s)

1. Safety of filgrastim in patients with liver failure
2. Effects of filgrastim on liver regeneration assessed using biological markers and immunohistochemistry
3. Possible influence of filgrastim on liver function

See Interventions for details of assessments

Completion date

31/08/2006

Eligibility

Key inclusion criteria

1. Age 18-70 years
2. Recent heavy alcohol intake (>80 g/day)
3. Biopsy-proven alcoholic steatohepatitis
4. Maddrey's score >20 and <70
5. Leucocyte count <15 g/L
6. Ability to give an informed consent

Participant type(s)

Patient

Healthy volunteers allowed

No

Age group

Adult

Lower age limit

18 Years

Upper age limit

70 Years

Sex

All

Total final enrolment

24

Key exclusion criteria

1. Platelet count <20 g/L
2. International Normalised Ratio (INR) >1.9
3. Known hypersensitivity to filgrastim (G-CSF)
4. Creatinine >150 µmol/L
5. Recent (10 days) infection or gastrointestinal hemorrhage
5. Documented hepatocellular carcinoma, hepatitis B, C, or HIV seropositivity
6. Ongoing pregnancy

Date of first enrolment

01/09/2005

Date of final enrolment

31/08/2006

Locations

Countries of recruitment

Switzerland

Study participating centre

Gastroenterology and Hepatology

Geneva

Switzerland

CH-1211

Sponsor information

Organisation

Foundation for Liver and Gut Studies (FLAGS) (Switzerland)

Funder(s)**Funder type**

Other

Funder Name

Foundation for Liver and Gut Studies (FLAGS), a non profit organisation based in Geneva (Switzerland)

Funder Name

University Hospital of Geneva (Hôpitaux Universaires de Genève; HUG) (Switzerland)

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	01/07/2008	30/12/2020	Yes	No