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Treatment of hepatcellular carcinoma with neoplastic thrombosis of the main portal vein using sorafenib and percutaneous radiofrequency ablation comparing to Sorafenib alone

Submission date
09/07/2016

Recruitment status
No longer recruiting

Registration date
26/07/2016

Overall study status
Completed

Last Edited
04/02/2019

Condition category
Cancer

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Hepatocellular cancer (HCC) is the most common type of liver cancer. It often develops in patients that have a liver disease (such as a viral hepatitis infection) or cirrhosis. There are a number of treatment options for liver cancer, particularly if it is diagnosed early. Radiofrequency ablation (RFA) is a treatment whereby radio waves can be used to destroy the cancerous cells and causing the tumour to shrink. Chemotherapy is another option, particularly at for more advanced stages of the disease as it has been shown to slow down progression. This study is looking at the three year survival rate for HCC patients with advanced disease involving main portal vein tumor thrombus (where the main blood vessel from the liver is partially blocked by a tumor) treated with RFA and sorafenib (a drug used to treated advanced liver cancer) compared with HCC patients that are treated only with sorafenib

Who can participate?
Adult patients with HCC with main portal vein tumor thrombus (MPVTT)

What does the study involve?
Participants are randomly allocated to one of two groups. Those in group 1 undergo RFA treatment for both their HCC and portal vein tumor thrombus tumors; the number of RFA sessions depend upon the size of the tumors. They are also treated with sorafenib. Those in group 2 are treated with sorafenib alone. All patients are followed up at 12, 24 and 36 months after the treatment

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

Where is the study run from?
A total of 5 hospitals in Italy.

When is the study starting and how long is it expected to run for?
September 2010 to June 2014

Who is funding the study?
D. Cotugno Hospital (Italy)

Who is the main contact?
Dr Antonio Giorgio
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Contact information

Type(s)
Scientific

Contact name
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Protocol serial number
SORAFENIB2011

Study information

Scientific Title
Sorafenib combined with percutaneous radio-frequency ablation of both hepatocellular carcinoma nodule and portal vein tumor thrombus compared with sorafenib alone: a western randomized controlled trial

Study objectives
To verify if the combination of percutaneous radiofrequency ablation (RFA) of both intraparenchymal hepatocellular carcinoma (HCC) and oral sorafenib is superior to oral sorafenib alone on increasing 3 years survival rate in patients with cirrhosis and HCC and invasion of main portal vein (MPV).

Ethics approval required
Old ethics approval format

Ethics approval(s)
Ethical Commettee of D. Cotugno Hospital for infectious diseases, Naples, Italy, 11/04/2011

Study design
Interventional randomized controlled multicenter trial.

Primary study design
Interventional

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Hepatocellular carcinoma in cirrhosis

Interventions
Participants are randomly allocated to one of two groups:

1. RFA (radiofrequency ablation) of MPVTT (main portal vein tumor thrombus) and HCC (hepatocellular carcinoma) nodules plus sorafenib (combination group)
2. Sorafenib alone (sorafenib alone group)

Allocation was carried out prospectively with the use of a coded list compiled from a random number generator; the code was fully blinded to the field staff and trial participants were blinded to the code. The sample size was calculated considering 44% 3-year survival rate in the control group (Sorafenib alone) and assuming that the experimental group (RFA-MPVTT plus Sorafenib) woud obtain more than a 20% increase in survival. An alpha error of 0.05 and a study power of about 80% (beta=0.20) were considered. The number of patients per arm was calculated to be more than 37 patients per arm.

RFA (percutaneous radiofrequency ablation) of MPVTT (main portal vein tumor thrombus) was performed under unconscious sedation by the same physician (A.G.) with more than 30 years' experience in interventional US and all percutaneous procedures were performed within 7 days of diagnosis. RFA of portal vein tumor thrombus (PVTT) was performed as reported elsewhere. Briefly, RFA of MPVTT was performed under US guidance using a perfused electrode-needle, (caliber 15 G, exposed tip 1.5-2.0 cm, according to the thrombus width) connected to an RF generator at a power of 80-100 Watt for 5-8 minutes: when the portal trunk appeared completely hyperechoic, the RFA application was considered sufficient and the electrode needle was withdrawn with the RF generator still on, so as to avoid seeding. RFA of the portal thrombus was carried out firstly on the thrombus in the portal vein, taking care to avoid hepatic artery and common bile duct, and then on the hepatocellular carcinoma (HCC) intrahepatic nodule/s.

The number of sessions for ablation of both HCC nodules and MPVTT was scheduled as follows: one session in case of HCC nodules up to 3 cm and MPVTT length no more than 1.5 cm; two sessions in case of HCC nodules up to 5 cm and MPVTT length no more than 2.5 cm; 3 sessions in case of HCC nodules up to 6.5 cm and MPVTT length no more than 3.5 cm. The day after percutaneous RFA procedures all patients underwent clinical and laboratory tests and abdominal US.

After RF ablation HCC nodule’s necrosis was evaluated using enhanced triphasic computed tomography (CT), while the recanalization of portal vessels was analyzed using color Doppler and CEUS.

Follow-up:
All patients underwent post-treatment follow-up, starting from the first day after the procedure through clinical evaluation and laboratory exams, abdominal US/Color Doppler/CEUS; than every week for the first 4 weeks all patients underwent abdominal US/Color-Doppler evaluation. during the following 36 months were made abdominal US/Color Doppler/CEUS and CT scan evaluation monthly, abdominal US and serum assay of AFP every 2 months and CEUS and CT scan every 6 months.

Intervention Type
Procedure/Surgery

Primary outcome(s)
The survival rate, expressed in months, after 12, 24 and 36 months from treatment.

Key secondary outcome(s))
N/A

Completion date
04/06/2014

Eligibility

Key inclusion criteria
1. Child-Pugh A 5-6 liver cirrhosis
2. A single HCC nodule < 6.5 cm in diameter and concomitant main portal vein tumor thrombus (MPVTT)
3. Maximum 3 HCC nodules with the largest one no more than 5 cm with MPVTT

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Sex
All

Key exclusion criteria
1. Patients with ascites
2. Patients with bilirubin >2 mg/dl
3. Patients and with extrahepatic spread of disease

Date of first enrolment
07/06/2011

Date of final enrolment
30/06/2014

Locations

Countries of recruitment
Italy

Study participating centre
D. Cotugno Hospital for Infectious Diseases
Interventional Ultrasound Unit
Napoli
Italy
80131

Study participating centre
Tortorella Clinical Institute
Italy
84121

Study participating centre
Athena Clinical Institute
Italy
81016

Study participating centre
Gragnano Hospital
Italy
80054

Study participating centre
Ostuni Hospital
Italy
72012

Sponsor information

Organisation
D. Cotugno Hospital

Funder(s)

Funder type
Hospital/treatment centre

Funder Name
D. Cotugno Hospital (Italy)

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	01/11/2016		Yes	No