

# Occlusion of the portal liver vein to permit liver surgeries for liver cancer

<b>Submission date</b> 08/03/2017	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 13/03/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 22/09/2017	<b>Condition category</b> Cancer	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Hepatocellular carcinoma (HCC) is the most common type of liver cancer. This type of cancer starts in the liver (primary liver cancer). When other cancers spread to the liver it is known as secondary liver cancer. When possible, surgery is the main treatment because it still is the best options for treating primary and secondary liver cancer. As the liver is able to re-grow itself, surgeons are able to remove affected sections of the liver completely (liver resection). However, a certain amount of the liver must remain in order for the liver to re-grow. Patients who require a large section of their liver to be removed can undergo a portal vein embolization (PVE) which tries to get the liver to grow prior to a liver resection. A needle is placed through the skin into the liver and the blood vessel that has the largest amount of the tumour is embolized (cut off) by injecting an embolizing material (that is similar to glue). This tricks the liver into regrowing on the side without the tumour. After a few weeks, enough of the liver should have grown in order to have the surgery to remove the cancerous area. There are different types of materials that can be injected into the blood vessel to embolize it such as n-butyl-cyanoacrylate (NBCA) which is a liquid embolic material that usually is used as a tissue adhesive (glue). The aim of this study is to evaluate the efficacy of portal vein embolization (PVE) using n-butyl-cyanoacrylate (NBCA) through an ipsilateral approach as well as evaluate the accomplishment of liver surgery, patient out-come after hepatectomy and safety of the proposed PVE technique.

### Who can participate?

Patients aged 5-75 who require a liver resection.

### What does the study involve?

This study reviews the surgical outcomes of participants who have undergone a PVE and liver resection. After these procedures, participants are followed up with visits to the study centre every two weeks during the first month after the procedure and then every three months for the next five years. The follow up consists of scans of the liver and reviewing medical charts in order to assess how well the PVE worked in regrowing the liver and the overall health outcomes of the liver resection surgery.

### What are the possible benefits and risks of participating?

There are no notable benefits or risks involved with participating.

Where is the study run from?  
INCA - Brazilian National Cancer Institute (Brazil)

When is the study starting and how long is it expected to run for?  
January 2011 to December 2016

Who is funding the study?  
Investigator initiated and funded

Who is the main contact?  
Dr Jose Hugo Luz

## Contact information

**Type(s)**  
Scientific

**Contact name**  
Dr Jose Hugo Luz

**ORCID ID**  
<https://orcid.org/0000-0002-1222-850X>

**Contact details**  
INCA Brazilian National Cancer Institute  
Praça da Cruz Vermelha 23  
Centro  
Rio de Janeiro  
Brazil  
22251-030  
+55 (0)219 999 95225  
jhugoluz@gmail.com

## Additional identifiers

**Protocol serial number**  
N/A

## Study information

**Scientific Title**  
Portal vein embolization with n-butyl-cyanoacrylate through an ipsilateral approach before major hepatectomy: single center retrospective analysis of 50 consecutive patients

**Study objectives**  
The aim of this study is to evaluate the efficacy of portal vein embolization (PVE) with the n-butyl-cyanoacrylate (NBCA) through an ipsilateral approach as well as evaluate the accomplishment of liver surgery, patient out-come after hepatectomy and safety of the proposed PVE technique.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Brazilian National Cancer Institute Ethics Board, 27/01/2017, ref: 64117317.2.0000.5274

**Study design**

Single-center retrospective review study

**Primary study design**

Observational

**Study type(s)**

Treatment

**Health condition(s) or problem(s) studied**

Primary and secondary liver cancer

**Interventions**

This retrospective review study consists of participants that have been referred to have a portal vein embolization. Participants have the procedure which includes involves an ultrasounded guided puncture of the liver to gain access to the right portal vein. The occlusion of the port vein is obtained using n-butyl-cyanoacrylate (NBCA). The participant is then observed at the hospital for 24 hours and is discharged after.

Some time after the procedure (around a few weeks) participants undergo surgery to remove part of their liver. This is done to the standard level of care.

After the PVE and the surgery participants attend the study centre every two weeks during the first month following the procedures and after again then every three months for five years (participants can attend more follow up sessions if it is required).

The study centre visits consist of follow up from the attending physicians (surgeons or interventional radiologists). The follow up visits includes undergoing Volume CT scans and reviewing medical charts to assess the success of the portal vein embolization and the hepatectomy. Participants are followed up at regular periods for five years or when it is needed.

**Intervention Type**

Procedure/Surgery

**Primary outcome(s)**

Growth of the future liver remnant is measured using the Future Liver Remnant (FLR) volume changes, growth rate and kinetic growth rate obtained from the Volumetric Computer Tomography of the liver at one and four weeks after portal vein embolization.

**Key secondary outcome(s)**

1. Accomplishment of hepatectomy is measured using patients medical charts at weeks four to six after portal vein embolization
2. Patient out-come after hepatectomy is measured using patients medical charts at baseline,

week two, week four and every three months for five years

3. Safety of the proposed PVE technique measured using patients medical charts during their hospitalization stay after portal vein embolization

**Completion date**

31/12/2016

## Eligibility

**Key inclusion criteria**

1. Patients with primary and secondary liver cancer treatable by hepatectomy
2. Proportion of FLR volume to the total functional liver volume (TFLV) less than 25% or less than 40% in patients with previous chemotherapy or hepatic cirrhosis.
3. Aged between five to 75 years old

**Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

All

**Sex**

All

**Key exclusion criteria**

1. Extensive ipsilateral tumor precluding safe access to the portal vein
2. Unmanageable coagulopathy
3. Extensive extra-hepatic disease
4. Liver abscess or infection

**Date of first enrolment**

01/02/2011

**Date of final enrolment**

30/09/2016

## Locations

**Countries of recruitment**

Brazil

**Study participating centre**

**INCA - Brazilian National Cancer Institute**

Praça Cruz Vermelha

23 Centro

Rio de janeiro  
Brazil  
20230-130

## Sponsor information

### Organisation

National Cancer Institute of Brazil INCA

### ROR

<https://ror.org/055n68305>

## Funder(s)

### Funder type

Other

### Funder Name

Investigator initiated and funded

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr José Hugo Mendes Luz [jluz@inca.gov.br](mailto:jluz@inca.gov.br)

### IPD sharing plan summary

Available on request

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	results	20/09/2017		Yes	No