

### Introduction

1. Hepatocellular carcinoma (HCC) is one of the most common malignant tumours in Hong Kong.
2. Percutaneous ethanol injection (PEI) is the most established technique of imaging guided regional therapy for small HCC. In this treatment, absolute ethanol (alcohol) is injected via a small needle into the tumour in an attempt to kill the tumour cells.
3. The total amount of ethanol injected depends mainly on the tumour size. Usually only a small amount of ethanol can be injected in one session, this may be due to pain, leakage of ethanol into adjacent veins and to avoid toxicity. Multiple sessions are thus usually required and on average, the treatment requires 3 to 5 sessions.
4. The procedure is performed by radiologists with special training in interventional radiology in the Department of Radiology under image guidance.

### The Operation / Procedure

1. The procedure is performed through a small wound in the skin (percutaneously). Sedatives and analgesics may be given. The upper portion of the patient's abdomen will be exposed and cleaned with antiseptic. Local anaesthetics will be injected. US or CT of the liver will be performed to locate the tumour and guide the insertion of needle. After proper placement of the needle, ethanol will be injected.
2. The average duration of the procedure is 1 hour.
3. The vital signs including your blood pressure, pulse and oxygenation status will be monitored throughout the entire procedure.
4. After the procedure, the patient may be transferred to the ward for recovery and monitoring. If the patient tolerates the procedure well, he/she may be discharged on the same day. An appointment for the next session will be arranged if the treatment is not completed.
5. After completion of treatment, a CT or magnetic resonance imaging will be performed to assess the response of the tumour to treatment, if there is evidence of residual disease, further sessions of PEI or other treatment will be necessary.
6. The patient will then have regular follow up in the outpatient clinic. Blood tests to check alpha fetoprotein level and CT scan will be performed to monitor the status of the tumour.

### Before the Operation / Procedure

1. A written consent is required.
2. Please inform our staff before the examination if the patient thinks she is pregnant.
3. Check bleeding parameters, to be corrected if problem detected.
4. Except medication, fast for 4 hours before examination.
5. Appropriate antibiotics may be given to the patient before and after the procedure.
6. Check history of allergy and give steroid cover if necessary.
7. For diabetic patients on Metformin medication, patient should inform medical staff before examination.
8. Set up venous access.

### Risk and Complication

1. Transient pain, fever, mild alcohol intoxication ( 25% ).
  2. Bleeding into peritoneum (0.5 %), biliary tract (0.2%), liver capsule (0.2%), liver parenchyma (0.1%), etc.
  3. Pleural effusion ( 0.5% ).
  4. Portal vein thrombosis ( 0.3% ).
  5. Pneumothorax – gas in pleural cavity ( 0.2% ).
  6. Abscess ( 0.2% ).
  7. Hepatic infarct ( 0.2% ).
  8. Acute cholangitis ( 0.1% ).
  9. Intestinal perforation ( 0.1% ).
  10. Tumour seeding along the needle tract ( 0.7% ).
  11. Biliary stricture and ductal stone formation (rare).
  12. Procedure related death (rare).
  13. Combining the minor and major complications, the overall complication rate is 3.2%.
- Should a complication occur, another life-saving procedure or treatment may be required immediately.

### Disclaimer

This leaflet only provides general information pertaining to this operation / procedure. While common risks and complications are described, the list is not exhaustive, and the degree of risk could also vary between patients. Please contact your doctor for detailed information and specific enquiry.

### Reference

The Hong Kong Society of Interventional Radiology Limited, Patient Information Leaflet:  
Percutaneous Ethanol Injection for Hepatocellular Carcinoma (2010)