Percutaneous Ethanol Injection for Hepatocellular Carcinoma

Information for patients

Introduction

- Hepatocellular carcinoma (HCC) is one of the most common malignant tumours in Hong Kong.
- Percutaneous ethanol injection (PEI) is an 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.
- The total amount of ethanol injected depends mainly on the tumour size. Usually only a limited 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 may be needed. The procedure could be performed under local or general anaesthesia.
- The procedure is performed by radiologists with special training in interventional radiology in the Department of Radiology under image guidance.

Procedure

- In the planning stage, the patient will be assessed for the feasibility of PEI. This will include blood tests for liver function and alpha fetoprotein level (tumour marker for HCC). Assessment of the tumour size, location and other characteristics by ultrasound (US) and computed tomography (CT) is usually performed. Biopsy of the lesion may be done to confirm the diagnosis. There will also be assessment of the general medical condition (e.g. bleeding tendency) and co-existing disease.
- 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. One or several single-hole, multiple side-holes or multiprong needles will be used. Absolute alcohol will be injected through the needles after correct placement.
- In CT-guided PEI, a small amount of lipiodol may be mixed with alcohol for better delineation of the ablation volume.
- The average duration of the procedure is 1 hour.
- After the procedure, the patient may be transferred to the ward for recovery and monitoring. However, 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.
- 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.
- 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.

Potential Complications

- Transient pain, fever, mild alcohol intoxication (25%).
- Bleeding into peritoneum (0.5 %), biliary tract (0.2%), liver capsule (0.2%), liver parenchyma (0.1%),etc.
- Pleural effusion (0.5%).
- Portal vein thrombosis (0.3%).
- Pneumothorax – gas in pleural cavity (0.2%).
- Abscess (0.2%).
- Hepatic infarct (0.2%).
- Acute cholangitis (0.1%).
- Intestinal perforation (0.1%).
- Hepatic vein thrombosis (0.1%).
- Tumour seeding along the needle tract (0.7%).
- Procedure related death (rare).
- Combining the minor and major complications, the overall complication rate is 3.2%.

Disclaimer

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