



Service Priorities and Programmes
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Enhancement of medication safety in Preparation and Administration of chemotherapy During Transarterial chemoembolization (TACE) in the radiological department

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Introduction

TACE is the commonest approach for the management of hepatocellular cancer without curative options. It consists of the selective injection of cytotoxic or antineoplastic drugs mixed with lipiodol into the hepatic artery followed by the administration of embolizing agents through angiocatheter, in order to promote arterial obstruction to inhibit tumor growth. Our TACE procedures involve the mixing of the lipiodol and cisplatin by trained nurses. The dose is calculated by radiologist on-site according to tumor condition on the diagnostic hepatic angiogram right before the TACE procedure. Despite the huge number of TACE procedures performed in our department for patients with HCC for many years, the cytotoxic or antineoplastic drug preparation and delivery during TACE were not performed under closed system. NIOSH and The United States Pharmacopeia's General Chapter 797 (USP 797) recommend using a closed-system transfer device to minimize occupational exposures to antineoplastic drugs. Some studies have shown the benefits of a closed system in reducing hazardous drug surface contamination when compared to traditional preparation techniques in the clinical setting.

Objectives

To enhance quality & safety of chemotherapy hazardous drug preparation and delivery by introduction of a new closed-system approach during TACE procedure in the NTWC, in order to minimize occupational exposures to antineoplastic drugs.

Methodology

A new closed-system approach for drug preparation and delivery with the use of intravenous (IV) injector and connector (PhaSeal®) was introduced. The Injector Luer Lock ensures a closed drug transfer by means of double, elastomeric membranes. The Injector Luer Lock attaches to a standard syringe for a dry and leakproof connection during preparation and administration. The connector is attached to angiocatheter for closed administration of hazardous drugs. Connector mates with the injector luer lock and produce a channel for safe drug transfer via injection or infusion.

Result

Certified nurses were trained to perform TACE drug preparations using standard aseptic & hazardous drug preparation techniques with the new closed system approach. No spillage of anticancer drug emulsion has been committed by our nurses and radiologists since the start of this practice. There was no medication incident related to the new system. The new system has been well accepted by all staff since implementation.