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Port Free Chemotherapy for Recurrent or Metastatic Colorectal Cancer. Is Port Really Necessary?

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Background

The introduction of totally implantable port systems started in the early 1980s [1]. Today, these devices provide easy vascular access for delivery of chemotherapy, fluids, medications, blood products and parenteral nutrition solutions. Over the last few decades, many management changes in oncology have occurred, particularly with respect to new chemotherapy combinations and more complex application schemes. Cancer patients usually require repeated venous punctures for treatment monitoring, application of chemotherapy or blood transfusions. Central venous catheters and implantable port systems have therefore substantially facilitated the problem of vascular access. To date, safe and easy-to-handle port systems have become an integral part of daily clinical routine in oncology [2]. However, there are several important complications associated with central venous (CV) port [3]. After immediate perioperative and short-term complications such as accidental arterial puncture, hematoma, air embolism, pneumothorax or vessel perforation [4], clinical oncologists are most often concerned with major long-term complications occurring during the use of ports in daily routine care. Chemotherapy for colorectal cancer has advanced remarkably with the introduction of folinic acid, fluorouracil, and irinotecan (FOLFIRI); and folinic acid, fluorouracil, and oxaliplatin (FOLFOX); therapies, which require a CV port. With the recent development of capecitabine plus oxaliplatin (XELOX) therapy, capecitabine plus irinotecan (XELIRI) therapy and irinotecan plus S-1 (IRIS) therapy involving oral administration of drug preparations, etc. Implantation of a CV port can be now avoided.

However, vascular pain occasionally requires switching of the drip infusion route during XELOX therapy by the administration of oxaliplatin via the peripheral vein. Vascular pain and phlebitis induced by intravenous infusion of antineoplastic agents reduces the completion or continuation of chemotherapy. The causative factors of vascular pain and phlebitis include the pH and osmotic pressure of the solution, size of the vein used, size and material of the catheter, and infusion periods [5]. A number of methods for avoiding phlebitis have been reported [6-7]; however, none of them are completely effective. Thus, there is an urgent need to develop new methods to prevent and alleviate phlebitis. Some investigators reported that addition of steroids to oxaliplatin drip infusion is useful in controlling vascular pain [8]. However, the pharmacological use of steroids can make oxaliplatin unstable due to the elevation of pH; further, the effectiveness of oxaliplatin in this therapy is unknown because of lack of published data in this regard. However, we recently reported that the effectiveness of dexamethasone (DEX) for controlling vascular pain caused by the administration of oxaliplatin via the peripheral vein during XELOX therapy [9].

Furthermore, we found that co-infusion of DEX to oxaliplatin may be a useful preventive method for oxaliplatin-induced hypersensitivity. We may be able to Port Free Chemotherapy for colorectal cancer by making full use of XELOX, XELIRI and IRIS therapy involving oral administration of drug preparations. However, further studies will be needed to determine the effectiveness of this method.

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