

Examination of lymphatic vessels as a drug delivery route

A. Fujimura¹⁾, Y. Nozaka¹⁾, K. Sera²⁾, S. Futatsugawa³⁾

¹⁾First Department of Oral Anatomy, School of Dentistry, Iwate Medical University
1-3-27 Chuo-dori, Morioka, Iwate 020-8505, Japan

²⁾Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0173, Japan

³⁾Nishina Memorial Cyclotron Center, Japan Radioisotope Association
348-58 Tomegamori, Takizawa, Iwate 020-0173, Japan

Abstract

We thought that tumor metastasis to regional lymph nodes might be done by initial lymphatics from our past reports. Therefore we have recommended that we should use the lymphatic vessels as a drug delivery route from the periphery to the regional lymph node. In fact, the peritumor-injection of anti-angiogenic agent decrease the proliferation of tumor cells in the regional lymph nodes. We monitored instead the movement of the antitumor agent Cisplatin, which has quantifiable platinum in the molecular structure. The purpose of this study was to establish, by measuring platinum, that Cisplatin was delivered selectively from the tumor to the regional lymph nodes via the peripheral lymphatic vessels.

1. We can detect the platinum in the regional lymph nodes, but can't detect it in the blood. Platinum delivery to regional lymph nodes via the lymphatics increased during 24 hours.

2. Cisplatin concentration of 0.1 mg /ml were suitable for the rabbit.

If this type of therapy could be established, the dissection of regional lymph nodes would become unnecessary, side effects from chemotherapy would decrease. We also would expect that the QOL of the patient would improve.