Accumulation in the body of anticancer drug topically administered to suncus

A. Fujimura[1], N. Fujiwara[1], I. Sugiyama[2], Y. Sadzuka[2], T. Hosokawa[3], Y. Ando[1], S. Goto[3] and K. Sera[4]

[1]Division of Functional Morphology, Department of Anatomy, Iwate Medical University
2-1-1 Nishitokuta, Yahaba, Iwate 028-3694, Japan

[2]Department of Advanced Pharmaceutics, School of Pharmacy, Iwate Medical University
2-1-1 Nishitokuta, Yahaba-cho, Shiwa-gun, Iwate 028-3694, Japan

[3]Nishina Memorial Cyclotron Center, Japan Radioisotope Association
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

[4]Cyclotron Research Center, Iwate Medical University
348-58 Tomegamori, Takizawa, Iwate 020-0603, Japan

Abstract

A side effect of anti-cancer drugs in humans is vomiting. In this study, we investigated in small experimental animals that an effective dose of an anticancer agent was administered locally, and that it is an amount that does not cause systemic side effects. Suncus is known to exhibit a vomiting reaction by administration of anticancer drugs. That is, unless a vomiting reaction is observed after administration of an anticancer agent, it can be proved that the administration method used in this study suppresses the onset of side effects. Furthermore, we aim to excavate medicines that have been shown to be remarkable for tumors, but have been excluded due to side effects in the past.

Topical administration of an anticancer drug has an emetic response as a side effect despite the accumulation of the anticancer agent at a sufficient concentration to exert anticancer action in the tongue and its regional lymph node. From these results, local direct administration of anticancer drugs contributed to the reduction of dose.

As a result, the possibility of suppressing the occurrence of side effects was suggested. In addition, it is possible to reduce the number of direct administration to the local site by combination with sustained release formulation, thus contributing to the improvement of quality of life during treatment of patients.