

光武範吏教授が日本放射線影響学会「Highly Cited Review Article Award (2021-2025)」を受賞

2025 年 10 月 24 日～26 日に開催された日本放射線影響学会第 68 回大会／第 6 回アジア放射線研究会議（JRRS/ACRR2025）合同大会において、光武範吏教授（原研医療）は、Highly Cited Review Article Award(2021-2025)を受賞しました。

本賞は、2021～2025 年の Journal of Radiation Research に掲載された総説論文の中で、特に引用回数が多かったものの筆頭著者に授与される賞です。

Professor Norisato Mitsutake, Department of Molecular Oncology, was awarded the Highly Cited Review Article Award (2021–2025) at the Joint Meeting of the 68th Annual Meeting of the Japanese Radiation Research Society and the 6th Asian Congress of Radiation Research (JRRS/ACRR 2025).

Highly Cited Review Article Award (2021-2025)

光武 範吏 殿

Molecular pathogenesis of pediatric thyroid carcinoma

Norisato Mitsutake*, Vladimir Saenko

Journal of Radiation Research, 62(S_1): Pages i71-i77, 2021

上記の貴殿の論文は、2021～2025年に *Journal of Radiation Research* に掲載された Review Article の中で、引用回数が特に高いと判断されましたので、ここに表彰いたします

令和7年10月24日

一般社団法人 日本放射線影響学会

理事長 田代



Highly Cited Review Articles (2021-2025)

(from the category of "Fundamental Radiation Science")

Molecular pathogenesis of pediatric thyroid carcinoma

Norisato Mitsutake*, Vladimir Saenko

Journal of Radiation Research, Volume 62, Issue Supplement_1, April 2021, Pages i71–i77,

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Published: 05 May 2021



Abstract

There has been little understanding of the molecular pathogenesis of pediatric thyroid cancers. Most of them are histologically classified as papillary thyroid carcinoma (PTC). Ionizing radiation is the most important environmental factor to induce PTC, especially in children. Particularly, radiation-related pediatric PTCs after the Chernobyl accident provided invaluable information. In addition, the recent accumulation of sporadic pediatric PTC cases, partly due to advances in diagnostic imaging, has also provided insight into their general pathogenesis. In PTC development, basically two types of genetic alterations, fusion oncogenes, mainly *RET/PTC*, and a point mutation, mainly *BRAF^{V600E}*, are thought to play a key role as driver oncogenes. Their frequencies vary depending on patient age. The younger the age, the more prevalent the fusion oncogenes are. Higher incidence of fusion oncogenes was also observed in cases exposed to radiation. In short, fusion oncogenes are associated with both age and radiation and are not evidence of radiation exposure. The type of driver oncogene is shifted toward *BRAF^{V600E}* during adolescence in sporadic PTCs. However, until about this age, fusion oncogenes seem to still confer dominant growth advantages, which may lead to the higher discovery rate of the fusion oncogenes. It has been postulated that *RET/PTC* in radiation-induced PTC is generated by ionizing radiation; however, there is an interesting hypothesis that thyroid follicular cell clones with pre-existing *RET/PTC* were already present, and radiation may play a role as a promoter/progressor but not initiator. Telomerase reverse transcriptase gene (*TERT*) promoter mutations, which are the strongest marker of tumor aggressiveness in adult PTC cases, have not been detected in pediatric cases; however, *TERT* expression without the mutations may play a role in tumor aggressiveness. In this paper, the recent information regarding molecular findings in sporadic and radiation-associated pediatric PTCs is summarized.

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Successful emergency evacuation from a hospital within a 5-km radius of Fukushima Daiichi Nuclear Power Plant: the importance of cooperation with an external body

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Abstract

Emergency evacuation during a disaster may have serious health implications in vulnerable populations. After the accident at the Fukushima Daiichi Nuclear Power Plant (FDNPP) in March 2011, the Japanese central government immediately issued an evacuation order for residents living near the plant. There is limited information on the process of evacuation from medical institutions within the evacuation zone and the challenges faced. This study collected and analyzed publicly available resources related to the Futaba Kosei Hospital, located 3.9 km northwest of the FDNPP, and reviewed the hospital's evacuation procedures. On the day of the accident at the FDNPP, 136 patients were admitted in the aforementioned hospital. The hospital's director received information about the situation at the FDNPP from the local disaster task force and requested the immediate evacuation of all patients. Consequently, four patients, including those with an end-stage condition, died during the evacuation. Early intervention by external organizations, such as the Japan Self-Defense Forces, helped the hospital to complete the evacuation without facing major issues. However, despite such an efficient evacuation, the death of four patients suggests that a significant burden is placed on vulnerable people during emergency hospital evacuations. Those with compromised health experience a heavy burden during a nuclear disaster. It is necessary for hospitals located close to a nuclear power plant to develop a more detailed evacuation plan by determining the methods of communication with external organizations that could provide support during evacuation to minimize the burden on vulnerable patients.