Medical personnel is usually exposed to ionizing radiation while performing diagnostic, interventional, or therapeutic procedures in planned conditions, which can elevate the risks and potentials of carcinogenesis.Strict regulations and recommendations were founded and adopted by the International Commission on Radiological Protection (ICRP) on the conservative premise that no amount of exposure can be considered safe for granted (Osman et al., 2022; Sulieman et al., 2022; Alkhorayef et al., 2020; ICRP, 2007).Specific dose limits were established to reduce the probability of radiation-induced cancer effects and prevent tissue reaction occurrence (Johary et al., 2022; Harrison et al., 2021; Sulieman et al., 2018; ICRP, 2007).Tissue reaction effects usually originate from somatic cell death or deformity after radiation exposure and only manifest if the radiation dosage surpasses a certain threshold.Cancer or hereditary factors that contribute to cancer development are known as cancer effects, and they can affect either adult somatic cells or germ cells through mutation.

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