

INTISARI

Radiasi hambur (*scattered radiation*) merupakan sebagian radiasi yang menyimpang dari sumber radiasi. Radiasi hambur adalah radiasi primer yang melewati suatu objek, lalu dibiaskan sehingga mengalami hamburan. Paparan radiasi hambur yang berlebih dapat memberikan efek yang merugikan pada tubuh manusia. Berbagai upaya dapat dilakukan untuk membatasi paparan radiasi hambur. Tujuan dari *narrative review* ini adalah untuk mendeskripsikan usaha proteksi radiasi yang paling efektif untuk membatasi paparan radiasi hambur ditinjau dari segi analisis ruangan dan untuk mengetahui perbedaan pengaruh ketebalan dinding penahan dalam pembatasan dosis radiasi hambur.

PubMed, *Science Direct*, dan *Google Scholar* merupakan *database* yang digunakan untuk pencarian literatur. Kata kunci yang digunakan yaitu *X-rays*, *radiation protection*, *scattered radiation*, *radiology installation*, *radiation leakage*, *wall thickness*, *radiation shield* dan *space analysis* yang dipadukan dengan menggunakan operator Boolean (AND). Total referensi yang digunakan sebanyak 35.

Berbagai macam usaha yang dapat dilakukan untuk membatasi paparan radiasi hambur diantaranya pengaturan jarak aman, pengaturan tegangan tabung, ketebalan dinding penahan dan pemasangan alat-alat proteksi radiasi. Kesimpulan dari *narrative review* ini pengaturan jarak dan tegangan sumber radiasi lebih efektif untuk membatasi paparan dosis radiasi hambur dan ketebalan dinding penahan radiasi juga berpengaruh dalam pembatasan laju paparan radiasi hambur, semakin tebal dinding maka laju paparan radiasi hambur yang melewati dinding akan semakin kecil. Usaha-usaha proteksi radiasi perlu diterapkan agar dapat memberikan keamanan bagi masyarakat disekitarnya, diantaranya adalah pengaturan jarak dan tegangan, serta pemeliharaan fasilitas radiasi dengan pengukuran ketebalan dan pemilihan jenis material yang tepat.

Kata Kunci : proteksi radiasi, radiasi hambur, sinar-x

ABSTRACT

Scattered radiation is part of radiation that deviates from the radiation source. Scattered radiation is primary radiation that passes through an object, then is refracted so that it becomes scattering. Excessive exposure to scattered radiation may produce a detrimental effect on the human body. Various attempts were made to limit radiation exposure. The purpose of this narrative review is to describe effective efforts in radiation protection to limit scattered radiation exposure in terms of room analysis and to find out the difference in the effect of retaining wall thickness in limiting the scattered radiation dose.

PubMed, Science Direct, and Google Scholar are databases used to search literature. The keywords used for literature searching are X-rays, radiation protection, scattered radiation, radiology installation, radiation leakage, wall thickness, radiation shield and space analysis combined using the Boolean operator (AND). The total references used are 35.

Various efforts can be made to limit radiation exposure including safe distance measurement, tube voltage regulation, shield wall thickness, and installation of radiation protection equipment. The conclusion of this narrative review is that setting the distance and voltage of the radiation source is more effective in limiting radiation dose exposure and the thickness of the radiation barrier wall can limit the dose rate of the scattered radiation, the thicker the wall, the smaller the rate of radiation exposure passing through the wall. Radiation protection efforts need to be implemented in order to provide security for the surrounding community, including distance and voltage regulation, as well as maintenance of radiation facilities with the right thickness and selection of the right type of material.

Keywords: radiation protection, scattered radiation, x-ray