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ABSTRACTS**

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Assessment of the occupational exposure of urologists during percutaneous nephrolithotomy surgical interventions

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Percutaneous nephrolitholapaxy (PCNL) is an endoscopic procedure that represents the method of choice for the need to shred and eliminate larger stones in the kidneys. The procedure is performed under fluoroscopy guidance, with presence of medical staff in the vicinity of patient couch which presents potential radiation protection concern. Assessment of the radiation exposure of the urologist who performs the procedure is an essential part of radiation protection arrangement. The objective of this work is to assess radiation dose for urologist in order to verify compliance with regulatory dose limits and to investigate need to occupations dose monitoring arrangements. Furthermore, in the particular case, the X-tube is above the patient's table, which brings higher dose compared with situation when it is bellow. Two consecutive 3 months long research was based on active personal dosimeters (APD) and passive, thermoluminescence dosimeters (TLD) use to assess whole body and eye lens occupational dose. During this period 77 interventions (conducted by two urologists) were performed. The average exposure measured using APD was 147 μSv , but doses varied from 24.5 μSv to 813 μSv . Using dedicated eye lens TLDs placed on left and right temple, the doses for the urologist were 3, 24 mSv and 3.43 mSv, respectively for first and 0.9 mSv and 1.03 mSv for second urologist. Whole body dosimeters worn over the apron showed a cumulative dose of 6.31 mSv and 0.54 mSv for two urologists, respectively. The presented results indicate that doses are below the regulatory dose limits; however, their magnitude requires caution and careful individual monitoring arrangements.



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