Letter to the Editor

IATROGENIC RADIATION EXPOSURE OF THE BULGARIAN POPULATION

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The application of ionizing radiation (IR) in medicine for diagnostic and therapeutic purposes is generally the main source of excessive exposure of the population. The exposure of the Bulgarian population from natural and man-made sources is an object of many studies and publications, some of which have general characteristics (1). Essential data used on this were studied recently (2,3). It is evident from the given references that the medical exposure is equal to about 50% of background and approximately 80% of excessive exposure (2,3). The medical exposure of the Bulgarian population up to the year 2000 approximates 9600 man-Sv/a, and the average annual individual effective dose for this population is 1.16 mSv/a (0.93 by diagnostics and 0.23 by radiation therapy). This value is rather high compared to the results of the devel-

Table 1: Dynamics of medical diagnostic exposure of the Bulgarian population.

Time period	1951-1960	1961-1970	1971-1980	1981-1990	1991-2000
I. X-ray diagnostics (total)					
Annual frequency of the examinations (per 1000 capitas)	486	768	1000	932	682
Average annual effective dose per capita (mSv/a)	0.77	1.18	1.51	1.43	0.87
Annual collective effective dose (man-Sv/a) (1000s)	5.9	9.7	31.1	12.7	7.4
II. Nuclear medicine					
Annual frequency of the examinations (per 1000 capitas)		2.4	8.4	15.6	6.7
Average annual effective dose per capita (mSv/a)		0.02	0.09	0.11	0.06
Annual collective effective dose (man-Sv/a)		160	780	980	510

*From National Center of Radiobiology and Radiation Protection, Sofia, Bulgaria.

oped countries (4). The medical diagnostic exposure dynamics for the second half of the 20th century is represented on Table 1.

The analysis of this date of Bulgarian population shows a necessity of further optimization. The creation of a national system for control and management of the medical exposure is forthcoming in the country and aims at improvement of patient radiation protection.

REFERENCES

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4. Data from 1996 UNSCEAR Surveys of Medical Usage and Exposures.

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