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Iodine prophylaxis--the protective factor against stomach cancer in iodine deficient areas

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Abstract

Background: Poland has one of the highest death rates for stomach cancer in Europe. Moderate iodine deficiency and in consequence high goitre prevalence led to the implementation in 1996 of a very efficient mandatory model of iodine prophylaxis, based on household salt iodisation (30 +/- 10 mg KI/1 kg of salt).

Aim of the study: The aim of the study was evaluation of incidence rate of stomach cancer and its possible relation to increased iodine consumption in the years 1992-2004.

Methods: Iodine supply and effectiveness of iodine prophylaxis were evaluated on the basis of comparative analysis of goitre prevalence and ioduria in schoolchildren. To allow comparison between time periods with varying population age structures, the incidence rates of stomach cancer were standardized for age, using the "world standard population". The direct standardization method has been applied. For each sex, the time-trend of incidence rates was shown in graphs over the years 1991-2004.

Results: Evident increase in iodine consumption in this period of time was proved by rise in percentage of schoolchildren (6-8 years old) with ioduria above 100 microg/l from 11.4% in 1992-1993 to 52.9.1% in 2003. It was correlated with the decrease in goitre prevalence from 18.8% to 3.2% respectively. The 24-h thyroid uptake of (131)I in investigated population fell from 45.5% in 1986 to 26.8% in 1998. In Krakow the standardized incidence ratio of stomach cancer for men decreased from 19.1 per 100,000 to 15.7 per 100,000, and for women from 8.3 per 100,000 to 5.9 per 100,000 in the years 1992-2004. A significant decline of average rate of decrease was observed in men and women (2.3% and 4.0% per year respectively).

Conclusion: Observed association between improved iodine supply and decrease of incidence of stomach cancer could indicate the protective role against stomach cancer of iodine prophylaxis in iodine deficient areas--further studies are necessary.

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