

INCREASING INCIDENCE OF THYROID CANCER IN GREAT BRITAIN, 1976 – 2005: AGE-PERIOD-COHORT ANALYSIS

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Background and Aims: Reasons for recent increases in the incidence of primary thyroid cancer have not been explained. This study aimed to fully examine temporal trends in the incidence of primary thyroid cancers diagnosed in 0-49 year olds in parts of Great Britain (GB) during the period 1976-2005.

Methods: Case data on thyroid cancer were obtained from four regional cancer registries in GB (Northern and Yorkshire, North West, Wales and Scotland). Age-standardised incidence rates (ASRs) and 95% confidence intervals (CIs) were calculated. Negative binomial regression was used to examine the effects of age, sex, drift (linear trend), non-linear period and non-linear cohort.

Results: The study analysed 4327 cases of thyroid cancer aged 0-49 years. For males, the overall ASR was 3.9 per million persons per year (95% CI: 3.6-4.1). For females, the overall ASR was 12.5 (95% CI: 12.0-12.9). The best fitting negative binomial regression model included age ($P<0.001$), sex ($P<0.001$) and drift ($P<0.001$). Non-linear period ($P=0.42$) and non-linear cohort ($P=0.71$) were not statistically significant. For males aged 0-14 years, the ASR increased from 0.2 per million persons per year in 1976-1986 to 0.6 in 1996-2005. For males aged 15-29 and 30-49 the ASRs increased from 1.9 to 3.2 and from 7.3 to 12.6 per million persons per year, respectively. For females aged 0-14 years, the ASR increased from 0.3 to 0.5 per million persons per year. For females aged 15-29 and 30-49 the ASRs increased from 7.0 to 12.3 and from 21.2 to 40.0 per million persons per year, respectively.

Conclusions: There has been a linear increase in the incidence of thyroid cancer, which has led to a doubling of the number of cases diagnosed over a twenty year time span. The reasons for this increase are not well understood, but it is consistent with findings from other countries.