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A 22-Year Retrospective Epidemiological Review Of Thyroid Cancer Trends In Northern Ireland: 1993-2014

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Background and objectives

Thyroid cancer incidence has increased globally since the 1970s.1 Numerous studies have confirmed this striking trend including studies from: the United states,2–5 Puerto Rico,6 Canada,7 China,8 Saudi Arabia,9 Australia,10 France,11 Nordic countries,12 Portugal,13 Croatia,14 Slovak Republic,15 Great Britain as a whole,16 and Scotland.17 Wales18 and England20 alone. Some authors have identified the trend as early as the 1960s.19,20 The importance of studying trends worldwide is evident from the results in the literature. We aimed to produce a detailed report of trends in Northern Ireland (NI) to expand on previous work including a report of all cancers in NI21 and the cancer statistics presented on the NI Cancer Registry (NICTR) website annually (http://qub.ac.uk/research-centres/nictr/cancerinformation/).

Methods

A retrospective, descriptive epidemiological review was performed using anonymised data from the NICTR. CI93 is the thyroid cancer IDC-10 code. We used STATA to calculate incidence statistics and Joinpoint Regression Analysis22,23 to analyse trend significance. Registry ethical approval was previously granted.

Results

There were 1,212 cases over the 22 years (27.06% male, 72.94% female. F:M=2.7:1). Incidence increased significantly in females (1999-2014; average percentage change (APC) +4.6%, p<0.05, 95% confidence interval (CI) +2.4, +6.9). Frequency increased predominantly in ages 40-64 (1995-2014: APC +4.6%, p<0.05, CI +2.5, +6.5). 55.63% of the 320 cases with staging data (2010-2014) were stage I. Papillary carcinoma frequency increased dramatically (2004-2014, APC +11.01%, p<0.05, CI +5.8, +16.4).

Conclusions

This study shows that thyroid cancer incidence has increased in NI in the last 2 decades in females and middle-aged patients. This is shown to be mainly due to papillary carcinomas, potentially mostly stage I. These findings corroborate the findings in the literature.14-20 This data may support the hypothesis put forward in the literature19 that over-diagnosis, due to the advent and increased use of sensitive technologies such as ultrasound and fine needle aspiration, has resulted in apparent increasing trends in thyroid cancer incidence.

References:

2. Cook JD, Pinsky MD, Finkelstein SN, Wilber PE. Analysis of the rising incidence of thyroid cancer using the Surveillance, Epidemiology, and End Results (SEER) database. JAMA. 2010; 303(8):746-753.

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