Reviewer's report

Title: Time trends and age-period-cohort analyses on incidence rates of thyroid cancer in Shanghai and Hong Kong

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Reviewer: Stefano Petti

Reviewer's report:

This is an interesting study on time trends in thyroid cancer in Hong-Kong and Shanghai over a long period of time. The Authors adopted a novel approach developed by the US National Cancer Institute, namely, the age-period-cohort analysis, an analysis of temporal trends which sorts out the period effect (changes in disease definition, new diagnostic tools, etc. that may artificially change incidence) and the cohort effect (exposure to the same risk factors within the same age groups that change over time). The Authors assessed the Average Annual Percent Change (AAPC), that is, the mean increase in incidence rate and found AAPC 3.1% (95CI, 1.0-5.1%) and 3.8% (95CI, 1.9%-5.7%) in Shanghai and 2.2% (95CI, 1.5-2.8%) and 2.7% (95CI, 1.6-3.8%) in Hong-Kong, for males and females respectively. They also found significant cohort and period effects and concluded that the changed thyroid cancer trends may be due to a combination of improved diagnostic techniques and increased environmental exposures to risk factors.

This study is different from the usual time trends that are poor of any significance because of the aforementioned problems and suggest a serious public health problem in that country.

It is acceptable without further peer review.

However, it is necessary to rearrange the Abstract so that it results more clear for those readers who are not familiar with stat/epidemiological terms such as period effect, cohort effect, AAPC, etc. and deleting the last sentence which is not important in relation of the good quality of the paper.

In the Discussion section Authors must account for ecological fallacy typical of ecologic study (ie, no inference at individual level can be drawn from these studies but only at population level).

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:
none to declare