Temporal trends of thyroid cancer between 2010 and 2019 in Asian countries by geographical region and SDI, comparison with global data

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Abstract

Objective: This study aims to describe temporal trends of thyroid cancer (ThC) from 2010 to 2019, in Asian countries by geographical region and sociodemographic index, compared with global data.

Method: Annual case data and age-standardized rates (ASRs) of epidemiological indicators of ThC cancer data were collected from the 2019 Global Burden of Disease (GBD) study from 2010 to 2019 in 49 countries and territories in Asia. The relative difference (%) between years was used to show comparative variations of ASRs for the indicators studied. The female/male ratio was calculated by dividing female ASRs by male ASRs. Also, these rates were compared between the age group ≥70 years old and younger age groups.

Results: In 2019, more than 50% of ThC cases and deaths occurred in Asian countries. A total of 53% of ThC patients lived in Asia and more than 60% of the global burden of ThC was imposed on Asian countries. From 2010 to 2019, incidences, deaths, prevalence cases, and DALYs number of ThC cancer increased over 1.28-, 1.26-, 1.3-, and 1.2-fold, in Asia, respectively. During this period, the age-standardized incidence rate (ASIR) and the age-standardized prevalence rate (ASPR) of ThC cancer increased by 5% and 8%, respectively, while the age-standardized death rate (ASDR) and the age-standardized DALYs rate (DALYs ASR) of ThC cancer decreased by 6% and 4%, respectively. These trends are different from what happens in other continents. In 2019, age-specific incidence, death, prevalence, and DALY cases of ThC cancer were peaking at 50–54, 75–79, 50–54, and 55–59 years, respectively. In 2019, the highest ASIR and ASPR of ThC cancer was observed in high-income Asia Pacific countries and the highest ASDR and DALYs ASR in Southeast Asia countries. Only high-income Asia Pacific countries experienced a decreasing trend in ASIR and ASPR from 2010 to 2019. ASDR and DALYs ASR have the highest decreasing trend in high-income Asia Pacific. In 2019, among high SDI Asian countries, the Republic of Korea had the highest ASIR and ASPR, and Brunei Darussalam had the highest ASDR and DALYs ASR. The highest ASIR, ASDR, ASPR, and DALY ASR of ThC cancer was found in Lebanon and Malaysia (high-middle SDIs), Vietnam (middle SDIs), and Cambodia and Palestine (low-middle SDIs). Among low SDI Asian countries, Pakistan had the highest ASIR, ASDR, ASPR, and DALY ASR of ThC cancer. All indicators for most countries were higher in women than men.

Conclusion: More than half of the burden of thyroid cancer is imposed on the residents of the Asian continent. Although the incidence and prevalence of this cancer in Asian countries is lower than that of the world, America, and Europe, the highest rate of death from thyroid cancer occurs in Asia and they witness the highest burden of the disease. Therefore, it seems that implementing early detection strategies and increasing access to treatment facilities in Asia is one of the necessities of thyroid cancer control in its residents.

Keywords: Asia, burden, death, incidence, prevalence, thyroid cancer