Trends in melanoma tumour thickness in Norway 1980-2019

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# Background

Norway ranks fifth in incidence and second in mortality of cutaneous melanoma worldwide. Tumour thickness at diagnosis is the cornerstone of melanoma classification and the most important prognostic factor for clinically localized primary melanoma. Increased incidence of thin tumours may be a result of increased awareness and changes in pathological practice. Recently digitized tumour thickness data 1980-2007 and data from the Melanoma Registry 2008-, enable investigating long-term trends in melanoma tumour thickness.

# Aim

Investigate trends in tumour thickness, overall and in important subgroups such as sex, age and anatomic site, in a nationwide case series 1980-2019.

# Methods

Tumour thickness is categorized in T-categories: T1 (≤1.0 mm), T2 (1.0-2.0 mm), T3 (>2.0-4.0 mm), and T4 (>4.0 mm). Incidence rates is age-standardized using the European standard population. Trend and changes in incidence rate over time are analysed with annual percentage changes (APC) and average annual percentage change.

# Results

We included 47,439 morphologically verified first primary invasive melanoma cases (51.7% women) diagnosed 1980-2019. Median age at diagnosis increased from 58 years in 1980-1999 to 65 in 2008-2019. Women were diagnosed at a thinner stage than men. In men, median (interquartile range) tumour thickness decreased from 1.4 mm (0.75-3) in 1980-1999 to 1 mm (0.6-2.3) in 2008-2019, and in women from 1 mm (0.6–2) to 0.9 mm (0.5–1.8). T1 melanomas increased most during the period, and a plateau was found between 1993 and 2006 in the incidence of T1: APC (95% CI) was 17.02 (14.58, 19.51) in 1980-1993, 0.75 (-0.4, 1.91) in 1993-2006 and 6.08 (4.88, 7.3) in 2006-2019. No plateau was found for T2, T3 and T4 melanomas. However, although less pronounced, incidence of thicker tumours (>2mm) also increased. APC (95% CI) of T4 melanomas was 3.04 (2.32, 3.76) for 1980-2019.

# Conclusions

There is clear evidence that T1 melanomas has largest increase in incidence. However, an increasing trend also in thicker tumours, suggests that the rise in melanoma incidence is not only due to overdiagnosis. Awareness focused on elderly males would be effective for early detection and consequently help to reduce both incidence and mortality of melanoma in Norway.

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