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Are we seeing the effects of public awareness campaigns? A 10-year analysis of Breslow thickness at presentation of malignant melanoma in the South West of England☆

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Summary *Introduction:* The last 20 years has seen a marked improvement in skin cancer awareness campaigns. We sought to establish whether this has affected the presenting Breslow thickness of malignant melanoma in the South West.
Method: This is a retrospective study looking at the first presentation of melanomas from 2003 to 2011. Data was accessed using the local online melanoma database.

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Results: A total of 2001 new melanomas presented from 2003 to 2012 (Male:Female = 1:1.062). The average yearly number of melanomas was 200.1 (range = 138–312). The mean age was 62.5 years (range 12–99).

Data was analysed using a Chi^2 test. For 0–1 mm melanomas, there is a significant difference in the observed versus expected values over the 10 years ($p = 0.0018$).

There is an increasing proportion of 0–1 mm (thin) melanomas presenting year on year, with a positive linear trend. This is very statistically significant ($p < 0.0001$).

The 1–2 mm melanomas are decreasing in proportion with a negative linear trend ($p = 0.0013$). The 2–4 mm are also decreasing in proportion ($p = 0.0253$). There is no significant change in the thick >4 mm melanomas ($p = 0.1456$).

Conclusion: The proportion of thin 0–1 mm melanomas presenting in South West England has significantly increased from 2003 to 2012. There is no significant change in the thick >4 mm melanomas. This may be a result of increased public awareness due to effective public health campaigns which has significant prognostic and financial implications.

Introduction

Malignant melanoma is the 5th most common cancer in the United Kingdom (UK). In 2010 there were 12,818 newly diagnosed cases in the UK (6201 in men and 6617 in women), malignant melanoma accounting for 1% of all cancer related deaths. The incidence of malignant melanoma has increased significantly in the past 40 years. Since 1970, male incidence has increased 7-fold and female rates have quadrupled.[1] The increase in prevalence has made melanoma a focus of awareness campaigns in the UK.

In the UK, national campaigns have aimed to increase public awareness of skin cancer. The Sun Know How Campaign launched in 1996 by the Health Education Authority (HEA) was the first skin cancer prevention campaign in the UK.[2] It was based on the prominent Australian Slip-Slop-Slap campaign of the 1980s which produced good evidence that sustained public health promotion into skin cancer awareness significantly reduces morbidity and mortality, especially in the younger population.[3] The main aims of the UK campaign were to make skin cancer health promotion material free of charge and easily accessible. Sun Know How ended in 2000 when the HEA's functions were moved to the Health Development Agency (HDA) and Health Promotion England (HPE). No measurable impact data is yet available for this campaign.[2]

In 2003, Cancer Research UK led the SunSmart Campaign commissioned by the Department of Health (DH). SunSmart used high profile media platforms to educate the public on skin cancer. The campaign emphasised the importance of recognising signs of skin cancer and encouraging patients to present early to their doctor. SunSmart also created a positive attitude towards protection from overexposure to ultraviolet (UV) light.[4] Initial funding by the DH was modest but there has been a significant increase following the Cancer Reform Strategy in 2007.[2]

The unregulated use of sun beds has been an area of controversy and academic research in the UK. The International Agency for Research of Cancer (IARC) proposed a significant link between sun bed use and melanoma, expecially with exposure before the age of 35.[5] It has been estimated that there are 100 deaths each year related to sun bed use in the UK.[6] A recent systematic review and meta-analysis looking into the European melanoma burden found that sun bed use at a young age doubles the risk of melanoma. That study also reports strong evidence of a dose–response relationship and risk of melanoma.[7]

In 2009, The Sun Bed Survey supported by the DH endeavoured to look into sun bed use in 11–17 year olds in the UK. It found that there was significant variation across British regions with 11% of 11–17 year olds using sun beds in the North versus 4.2% in the Midlands. This was most pronounced in Liverpool and Sunderland with 49.7% of 15–17 year old girls using sun beds at least once a week. The survey also uncovered that only 20% of salons that had sun beds were regulated by the Sun Bed Association.[8] This research was a catalyst in producing the Sunbeds Policy which proposed stricter regulations of sun bed use in the UK.[9] The Sun Bed Regulation Act came into force in April 2011 which prevents under-18s using sun beds.[10]

Patient education plays a significant role in recognising skin cancer. A randomied controlled trial performed in Cleveland, Ohio, evaluated computerised-assisted education and hands on tutorials in self skin examination versus a control of simple leaflet education. Those that received computerised and hands on education would examine themselves regularly and also have increased confidence in identifying melanoma.[11]

In 1970, Alexander Breslow found that tumour thickness correlated with the prognosis of patients with melanoma.[12] In 2009 The American Joint Committee of Cancer (AJCC) developed a melanoma classification system based on a multisystem analysis of 30,946 patients. The AJCC sub classified melanoma thickness into 0–1 mm (T1), 1–2 mm (T2), 2–4 mm (T3) and >4 mm (T4). The 10-year survival of patients was 92% in T1 patients, 80% in T2 patients, 63% in T3 patients and 50% in T4 patients.[13]

The incidence of melanoma in South West of England is 44% higher in men and 42% higher in women when compared to the UK and Ireland average. The age-standardised UK average incidence of melanoma is 7.7 per 100,000 in men and 9.7 per 100,000 in women. In the South West the incidence of melanoma is 11.1 per 100,000 in men and 13.8 per 100,000 in women.[14]

The South West has the oldest median age (42.9 years) in the UK. 31.6% of the population reside in rural areas, which