

# Decreasing Melanoma Incidence in Subjects Under 40 Years of Age in a Spanish University Hospital

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## Introduction & Objectives

- There have been recent reports suggesting that melanoma incidences may have been decreasing in adolescents and young adults in the United States during the last years.<sup>1,2</sup>
- The objective of the study is to determine whether this demographical trend can also be observed in a Spanish urban population.

## Materials & Methods

We used a prospective clinical database of 871 cutaneous melanomas diagnosed and followed up between the years 2002 and 2019 at the melanoma unit of Hospital Universitari Vall d'Hebron, Barcelona, Spain. Age-adjusted melanoma rates were calculated based on dynamic population estimates from city council census

data. We evaluated trends in melanoma incidence over time by computing the annual percent change (APC) for melanomas in people under and over 40 years of age.<sup>3</sup> We also explored the effect of sex in these trends through stratification. All p-values are derived from two-tailed tests.

## Results

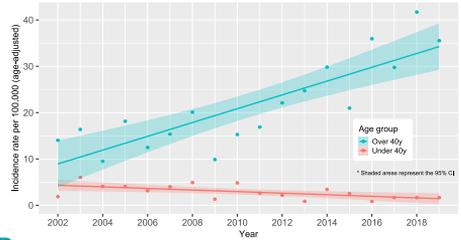
Out of 871 cutaneous melanomas, 117 were diagnosed in subjects under 40 years of age with a median age of 32 years. Melanoma in younger subjects was most common in women (59.8%), and the most frequent histological type was the superficial spreading melanoma (50.9%). There were no statistically significant differences regarding location, ulceration or median Breslow in comparison with patients above 40 years of age.

An overall increasing trend in melanoma incidence was observed (APC= 4.8%, 95% CI [2.4%, 7.1%],  $p < 0.001$ ). However, in subjects under 40 years of age we found a significant decreasing trend in the incidence of melanoma during the study period (APC= -6.3%, 95% CI [-11.1%, -1.5%],  $p < 0.05$ ). When comparing this trend with that of patients over 40 years (APC= 6.7%, 95% CI [4.3%, 9.2%],  $p < 0.001$ ) the difference was statistically significant ( $p < 0.001$ ). This downward trend was more marked in women (APC= -5.9%, 95% CI [-11.3%, -0.6%],  $p < 0.05$ ) than in men. Figures 1A & 1B.

These trends resulted in a lower percentage of patients under 40 years of age being followed and diagnosed during the second half of the study period. This suggests a notable demographical change, especially in women, regarding cutaneous melanoma. Figures 2A & 2B.

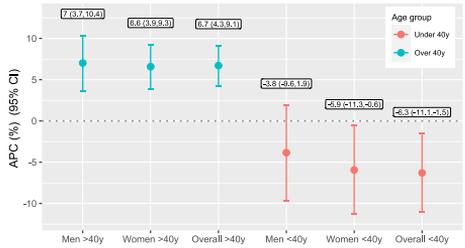
### 1A

Incidence rates of cutaneous melanoma by age older or younger than 40 years



### 1B

Annual percent change (APC) in melanoma incidences by sex and age group



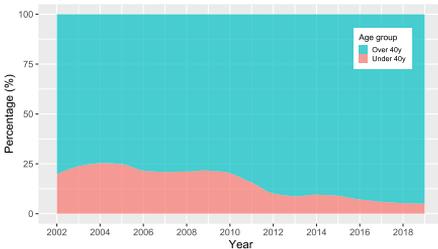
### 2B

Kernel density plot showing the distribution of patient ages by sex between the first and second half of the study period



### 2A

Percentage of melanoma cases by age older or younger than 40 years



## Conclusions

This is an observational study showing a decreasing trend in melanoma incidence in subjects under 40 years of age over the last 18 years. We found this negative trend to be more accentuated in women, which may suggest changes in ultraviolet radiation exposure as a possible factor. More studies are needed to confirm our findings, but it is reassuring to see that while overall melanoma incidence keeps increasing, incidence among younger patients seems to be declining.

## References

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3. Trend Algorithms. n.d. URL: [https://seer.cancer.gov/seerstat/WebHelp/Trend\\_Algorithms.htm](https://seer.cancer.gov/seerstat/WebHelp/Trend_Algorithms.htm) (Accessed 31 August 2020).