Sentinel lymph node biopsy rates in Victoria, 2018 and 2019

Caroline Watts[1,2], Andrew Spillane[3,4,5,6], Michael A Henderson[7,8], Anne Cust[1,3], Australian Melanoma Centre of Research Excellence Study Group*

Sentinel lymph node biopsy (SLNB) is a staging procedure for assessing metastatic spread from a primary melanoma to the draining lymph nodes. In Australia, it is recommended that SLNB be considered for people with melanomas of Breslow thickness greater than 1.0 mm, or more than 0.8 mm for those with other high risk pathological features.[1] Patients with a high risk primary melanoma and positive SLNB result are eligible for adjuvant systemic therapy. SLNB also allows risk stratification for guiding the frequency and extent of follow-up. It has been reported that fewer than 50% of people with newly diagnosed invasive melanomas in Australia undergo SLNB.[2,3]

To provide more recent information on SLNB rates in Australia, we analysed aggregated Victorian Cancer Registry data for all people with newly diagnosed invasive melanoma in Victoria during the 2018 and 2019 calendar years. Formal ethics approval for our analysis was not required according to a memorandum of understanding with the registry.

During 2018 and 2019, 892 of 1855 people diagnosed with invasive melanomas of greater than 1.0 mm thickness (48%) and 151 of 597 with melanomas of 0.8–1.0 mm thickness (25%) underwent SLNB. In a logistic regression model adjusted for Breslow thickness, age group and sex, SLNB rates were similar in 2018

Sentinel lymph node biopsies for people with newly diagnosed invasive melanoma, Victoria, 2018 and 2019, by age group at diagnosis and tumour Breslow thickness

Age group/ Breslow thickness	People with primary cutaneous melanomas	Sentinel lymph node biopsy		
		Biopsy performed	Biopsy result available*	Positive biopsy result
All ages	5944	1090 (18.3%)	1050	208 (19.8%)
< 0.8 mm	3171	23 (0.7%)	21	< 5†
0.8 to 1.0 mm	597	151 (25.3%)	149	12 (8.1%)
> 1.0 to 2.0 mm	908	450 (49.6%)	441	72 (16%)
> 2.0 mm	947	442 (46.7%)	415	115 (28%)
Data missing	321	24 (7.5%)	24	5 (20%)
< 60 years of age	1987	416 (20.9%)	403	94 (23%)
< 0.8 mm	1229	14 (1.1%)	12	< 5†
0.8 to 1.0 mm	192	71 (37%)	70	< 5†
> 1.0 to 2.0 mm	282	182 (64.5%)	177	38 (22%)
> 2.0 mm	190	137 (72.1%)	132	45 (34%)
Data missing	94	12 (13%)	12	5 (40%)
60 years or older	3957	674 (17.0%)	647	114 (17.6%)
< 0.8 mm	1942	9 (0.5%)	9	< 5†
0.8 to 1.0 mm	405	80 (20%)	79	8 (10%)
> 1.0 to 2.0 mm	626	268 (42.8%)	264	34 (13%)
> 2.0 mm	757	305 (40.3%)	283	70 (25%)
Data missing	227	12 (5.3%)	12	0

* Sentinel lymph node biopsy results for 40 people were missing in the Victorian Cancer Registry dataset. † Cell sizes below 5 cannot be reported because of conditions attached to using Victorian Cancer Registry data. [Correction added on 16 February 2022 after first online publication: the preceding note about cell sizes below 5 is added and the values below 5 under the "Positive biopsy result" column have been replaced with '< 5†'.] ◆

*In addition to the authors listed above: J Braithwaite,[9] DE Gyorki,[7] AM Hong[3] JW Kelly,[10] GV Long,[3-6] VJ Mar,[10] AM Menzies,[3-6] RL Morton,[3,11] F Rapport,[9] RPM Saw,[3,4,6] H Schmid,[1] RA Scolyer,[3,4,12] AL Smith,[1] A Winder,[3] GJ Mann.[3,13]

[1] Daffodil Centre, University of Sydney and Cancer Council NSW, Sydney, NSW. [2] The Kirby Institute UNSW, Sydney, NSW. [3] Melanoma Institute Australia, University of Sydney, Sydney, NSW. [4] Sydney Medical School, University of Sydney, Sydney, NSW. [5] Royal North Shore Hospital, Sydney, NSW. [6] Mater Hospital, Sydney, NSW. [7] Peter MacCallum Cancer Centre, Melbourne, VIC. [8] The University of Melbourne, Melbourne, VIC. [9] Australian Institute of Health Innovation, Macquarie University, Sydney, NSW. [10] Victorian Melanoma Service, Alfred Hospital, Melbourne, VIC. [11] NHMRC Clinical Trials Centre, University of Sydney, Sydney, NSW. [12] Royal Prince Alfred Hospital and New South Wales Health Pathology, Sydney, NSW. [13] The John Curtin School of Medical Research, Australian National University, Canberra, ACT. caroline.watts@sydney.edu.au • doi: 10.5694/mja2.51424

and 2019 (data not shown). Overall, 208 of 1050 SLNB results were positive (20%; expected range: 16–20%[4]), including 12 of 149 results for melanomas of 0.8–1.0 mm thickness (8%; expected range: 5–12%[5]). The proportions of people who underwent SLNB (22% *v* 17%) and of people with positive results (23% *v* 18%) were each higher for those under 60 years of age than for older people (Box). In a logistic regression model adjusted for Breslow thickness and age, SLNB rates were similar for men and women (data not shown).

Our findings suggest that the use of SLNB has not increased in Australia beyond previous reports,[2,3] despite the availability of effective systemic therapy. Reasons may include the knowledge and beliefs of general practitioners and dermatologists,[6] their views of the usefulness of SLNB,[7] patient characteristics and preferences, and the local availability of radiography and surgeons trained in the procedure.[6]

However, attitudes to SLNB may be shifting.[6] Recently introduced risk calculators facilitate personalised estimates of the risk of sentinel node involvement, based on age, Breslow thickness, histopathology subtype, mitotic rate, ulceration, and lympho-vascular invasion.[8] These calculators provide more personalised risk estimates than national guidelines with cut-points based on Breslow thickness and ulceration alone. The calculators improve targeting of SLNB by distinguishing patients for whom positive SLNB results are more likely from those at lower risk, including people with melanomas of greater than 1 mm thickness but without high risk features.[5] By improving the accuracy of staging, the calculators enable targeted access to adjuvant therapy.[9] SLNB is typically recommended for patients with greater than 10% risk of nodal metastases, and can be considered for those with a 5–10% risk.[8]

Our study was limited by the fact that 40 SLNB results (4%) were unavailable, and because prognostic information about clinically positive nodes and some other melanoma characteristics were not included in the analysed dataset. Most cancer registries do not routinely collect these data, but they are important for evaluating clinical guideline adherence, melanoma treatment, health care use, and patient outcomes. Up-to-date evidence-based information should be readily available to clinicians and patients for informing decisions about SLNB. The optimal use of online risk tools in practice, and barriers to patient access to SLNB, should be investigated.

Acknowledgements: Anne Cust is supported by a National Health and Medical Research Council (NHMRC) Career Development Fellowship (1147843). Caroline Watts received salary support from the NHMRC Centre of Research Excellence in Melanoma (1135285). We thank David Espinoza (NHMRC Clinical Trials Centre, University of Sydney) for assistance with the statistical analysis. We acknowledge the Victorian Cancer Registry for providing the data we analysed.

Competing interests: Several of the authors are involved in guideline committees related to the management of melanoma. ■

Received 19 July 2021, accepted 10 December 2021

1 Gyorki DE, Barbour A, Hanikeri M, et al. When is a sentinel node biopsy indicated for patients with primary melanoma? An update of the "Australian guidelines for the management of cutaneous melanoma". *Australas J Dermatol* 2017; 58: 274–277.

2 Smithers BM, Hughes MC, Beesley VL, et al. Prospective study of patterns of surgical management in adults with primary cutaneous melanoma at high risk of spread, in Queensland, Australia. *J Surg Oncol* 2015; 112: 359–365.

3 Varey A, Madronio C, Cust A, et al. Poor adherence to national clnical management guidelines: a population-based, cross-sectional study of the surgical management of melanoma in New South Wales, Australia. *Ann Surg Oncol* 2017; 24: 2080–2088.

4 Morton DL, Thompson JF, Cochran AJ, et al; MSLT Group. Final trial report of sentinel-node biopsy versus nodal observation in melanoma. *N Engl J Med* 2014; 370: 599–609.

5 Gershenwald JE, Scolyer RA, Hess KR, et al; American Joint Committee on Cancer Melanoma Expert Panel and the International Melanoma Database and Discovery Platform. Melanoma staging: Evidence-based changes in the American Joint Committee on Cancer eighth edition cancer staging manual. *CA Cancer J Clin* 2017; 67: 472–492.

6 Smith AL, Watts CG, Robinson S, et al; Australian Melanoma Centre of Research Excellence Study Group. Knowledge and attitudes of Australian dermatologists towards sentinel lymph node biopsy for melanoma: a mixed methods study. *Australas J Dermat* 2021; 62: 168–176.

7 Marchetti MA, Bartlett EK. Sentinel lymph node biopsy in cutaneous melanoma: where do we stand? *JAMA Dermatol* 2021; 157: 1159–1160.

8 Lo SN, Ma J, Scolyer RA, et al. Improved risk prediction calculator for sentinel node positivity in patients with melanoma: the Melanoma Institute Australia nomogram. *J Clin Oncol* 2020; 38: 2719–2727.

9 Smithers BM, Saw RPM, Gyorki DE, et al. Contemporary management of locoregionally advanced melanoma in Australia and New Zealand and the role of adjuvant systemic therapy. *ANZ J Surg* 2021; 9: 3–13. ■