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Original Research

Is initial excision of cutaneous melanoma by General Practitioners (GPs) dangerous? Comparing patient outcomes following excision of melanoma by GPs or in hospital using national datasets and meta-analysis

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Abstract ***Background:*** Melanomas are initially excised in primary care, and rates vary internationally. Until now, there has been no strong evidence one way or the other that excising melanomas in primary care is safe or unsafe. European guidelines make no recommendations, and the United Kingdom (UK) melanoma guidelines require all suspicious skin lesions to be initially treated in secondary care based on an expert consensus, which lacks supporting evidence, that primary care excision represents substandard care. Despite this, studies have found that up to 20% of melanomas in the UK are excised by general practitioners (GPs). Patients receiving primary care melanoma excision may fear that their care is substandard and their long-term survival threatened, neither of which may be justified.

Methods: Scottish cancer registry data from 9367 people diagnosed with melanoma in Scotland between 2005 and 2013 were linked to pathology records, hospital data and death records. A Cox proportional hazards regression analysis, adjusting for key confounders, explored the association between morbidity and mortality and setting of primary melanoma excision (primary versus secondary care). A pooled estimate of the relative hazard of death of having a melanoma excised in primary versus secondary care including 7116 patients from a similar Irish study was also performed.

Results: The adjusted hazard ratio (95% CI) of death from melanoma for those having primary care excision was 0.82 (0.61–1.10). Those receiving primary care excision had a median

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(IQR) of 8 (3–14) out-patient attendances compared to 10 (4–17) for the secondary care group with an adjusted relative risk (RR) (95% CI) of 0.98 (0.96–1.01). Both groups had a median of 1 (0–2) hospital admissions with an adjusted rate ratio of 1.05 (0.98–1.13). In the meta-analysis, with primary care as the reference, the pooled adjusted hazard ratio (HR, 95% CI) was 1.26 (1.07–1.50) indicating a significantly higher all-cause mortality among those with excision in secondary care.

Conclusions: The results of the Scottish and pooled analyses suggest that those receiving an initial excision for melanoma in primary care do not have poorer survival or increased morbidity compared to those being initially treated in secondary care. A randomised controlled trial to inform a greater role for GPs in the initial excision of melanoma is justified in the light of these results.

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1. Introduction

Melanoma incidence is increasing worldwide with over 132,000 new cases each year [1]. Melanoma can be hard to diagnose and, perhaps as a consequence, is often excised in primary care [2]. Current European consensus-based interdisciplinary and European Society for Medical Oncology (ESMO) guidelines do not make any recommendations at all about which health professionals should perform biopsy of suspicious skin lesions [3,4]. In the UK, skin disease accounts for nearly 9% of General Practitioner (GP) consultations, and with increasing incidence and growing public concern about melanoma it seems likely that melanomas will continue to be excised in primary care [5,6]. This is directly contrary to UK melanoma management guidelines, which state that the initial treatment of suspicious skin lesions should never be undertaken in primary care[7–9]. Such guidelines follow a consensus among secondary care specialists in the UK that GP-performed melanoma excision is substandard treatment placing patients at risk [10,11], although the supporting evidence for this view is not strong. The randomised Minor Surgery Trial in the Community (MiSTIC) concluded that the clinical importance of quality differences existed between minor surgery in primary and secondary care, but that the clinical importance of the difference was uncertain [12]. The true clinical importance of the quality difference, however, is of vital importance to those patients who do have a melanoma excised by a GP. As things stand, these patients may be deeply worried that their care is substandard and that their survival may have been compromised. Furthermore, a greater role for suitably skilled primary care practitioners in the initial management of suspicious skin lesions could benefit patients and health services. However, current guidelines and lacking evidence that initial GP melanoma diagnostic excisional biopsy is safe are impeding the large randomised trial needed to inform revised guidance and optimise melanoma management pathways everywhere.

We previously published data from over 1200 patients diagnosed with cutaneous melanoma in Northeast Scotland between 1991 and 2010 [2]. We found that patients who had received their primary excision in primary care were no more likely to die within 10 years and had less morbidity than those receiving primary excision in secondary care. Following a search of the international literature the only similar study providing evidence that primary care excision of melanoma does not seriously compromise key patient outcomes comes from an analysis of data from 7116 people diagnosed with cutaneous melanoma between 2002 and 2011 and recorded in the National Cancer Registry of Ireland. This study reported that 8.5% of melanomas in Ireland were removed in primary care with a non-inferior outcome, but adjusted for a limited number of potential confounders [13].

Using linked national data, we investigated whether patients diagnosed with cutaneous melanoma in Scotland between 2005 and 2013 had different mortality and morbidity outcomes depending on whether the diagnostic excisional biopsy was performed in primary or secondary care. We controlled for a greater number of confounders and also produced the first international pooled estimate of relative mortality for those having a melanoma initially excised in primary versus secondary care.

2. Methods

2.1. Data linkage

The Scottish Cancer Registry (including underlying pathology records); the National Records of Scotland (NRS) death registry; the Scottish Morbidity Record Acute Inpatient and Day Case Admission dataset (SMR01); and the Hospital Outpatient Attendance dataset (SMR00) for all patients diagnosed with cutaneous melanoma in Scotland between 1st January 2005 and 31st December 2013 were linked using the

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