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Population survival impact of new targeted and immune based therapies for metastatic or unresectable melanoma

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Introduction

New classes of drugs for metastatic or unresectable melanoma (MM) have shown improved survival in randomized trials (e.g., anti-CTLA-4, anti-PD-1, BRAF/MEK inhibitors). We sought to describe uptake of these new drugs and their impact on population-based survival outcomes of MM.

Objectives and Approach

We sought to describe uptake of these new drugs and their impact on population-based survival outcomes of MM. This was a retrospective, population-based cohort study of all treated MM in Ontario 2007-2015. Administrative data sources from the Institute for Clinical Evaluative Sciences (ICES) were utilized. Within ICES, cutaneous and non-cutaneous primaries were identified in the Ontario Cancer Registry. Administrative sources from Cancer Care Ontario, Ministry of Health and Long-Term Care, and Canadian Institute for Health Information identified patients treated with palliative systemic therapy, radiotherapy and metastatectomy. Temporal trends in utilization and survival were investigated. Survival by drug class was described.

Results

We identified 2,793 MM patients. First treatment was systemic therapy (46%), radiotherapy (41%) or metastatectomy (14%). MM patient number increased from 270 in 2007 to 418 in 2015. Systemic treatment rose from 125 MM first treated in 2007 to 343 in 2015. New drug treatments increased from <6% of reported first-line regimens in 2007 to 82% in 2015. 1-year and 2-year overall survival (OS) was 28% and 15% respectively for all MM in 2007-2009, rising to 46% and 35% for 2014-2015 (logrank $p<0.001$; adjusted hazard ratio (AHR) 0.56, 95% confidence interval (CI): (0.49,0.63)). Survival gains were largely in the subset treated primarily systemically, where new drugs were increasingly utilized (2-year OS 16% 2007-2009 vs. 44% 2014-2015 logrank $p<0.001$; AHR 0.46, 95% CI: (0.38,0.56)).

Conclusion/Implications

Utilization of systemic therapy for MM has increased considerably in routine practice during 2007-2015; at least some of this increase relates to use of novel agents since 2011. In line with randomized trial findings, new drug adoption was associated with substantial increases in population-based MM survival.

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