



ELSEVIER

Contents lists available at ScienceDirect

Cancer Epidemiology

journal homepage: www.elsevier.com/locate/canep

Improvement of relative survival in elderly patients with acute myeloid leukaemia emerging from population-based cancer registries in Switzerland between 2001 and 2013

Annatina Schnegg-Kaufmann^{a,b,1}, Anita Feller^{c,1}, Helen Baldomero^d, Alicia RoVo^a, Markus G. Manz^e, Michael Gregor^f, Anna Efthymiou^g, Mario Bargetzi^h, Urs Hessⁱ, Olivier Spertini^j, Yves Chalandon^k, Jakob R. Passweg^{c,d}, Georg Stussi^l, Volker Arndt^c, Nicolas Bonadies^{a,b,*}, the NICER Working Group

^a Department of Haematology and Central Haematology Laboratory, Inselspital, Bern University Hospital, University of Bern, Switzerland

^b Department for BioMedical Research, Inselspital, Bern University Hospital, University of Bern, Switzerland

^c Foundation National Institute for Cancer Epidemiology and Registration (NICER) c/o University of Zurich, Switzerland

^d Divisions of Hematology, Department of Medicine, University Hospital Basel, Switzerland

^e Haematology, University and University Hospital Zurich, Switzerland

^f Division of Haematology and Central Haematology Laboratory, Cantonal Hospital Lucerne, Switzerland

^g Department of Haemato-Oncology, Cantonal Hospital Fribourg, Switzerland

^h Division of Haematology and Transfusion Medicine, Cantonal Hospital Aarau, Switzerland

ⁱ Clinic for Haematology and Oncology, Cantonal Hospital St. Gallen, Switzerland

^j Service and Central Laboratory of Haematology, Centre Hospitalier Universitaire Vaudois, Lausanne University Hospital, Switzerland

^k Department of Oncology, Division of Hematology, Geneva University Hospitals and Faculty of Medicine, University of Geneva, Switzerland

^l Clinic of Haematology, Oncology Institute of Southern Switzerland, Switzerland

ARTICLE INFO

Keywords:

Acute myeloid leukaemia
Epidemiology
Classification
Incidence
Mortality
Survival

ABSTRACT

Acute Myeloid Leukaemia (AML) is a rare and heterogeneous haematological malignancy with increasing incidence in the elderly. We performed a population-based, observational analysis of AML cases reported to the *Cantonal Cancer Registries* in Switzerland. Data was aggregated by the *National Institute for Epidemiology and Cancer Registration* and stratified for the two time periods 2001–2007 and 2008–2013. Overall, 2351 new AML cases were registered with a stable age-standardised incidence rate (3.0 [95 CI: 2.8–3.2] per 100,000 person-years). This indicates that our observed raise of annual AML cases (+10.9%) is mainly related to demographic ageing and not to an increase of age-specific risks. The fraction of non-classifiable AML cases decreased over time (54.6% to 41.8%) but remained high in elderly patients (65–74 yrs: 44%; 75–84 yrs: 54.2%, 85 + yrs: 59.1%), suggesting less accurate diagnostics and reporting with increasing age. 5 yrs relative survival (RS) correlated with AML risk class (favorable: 61.7%–68.4%; adverse risk: 11.4%–21.9%) and age (< 65 yrs: 42.6–43.3%; 75–84 yrs: 2.0–3.0%), but improved only modestly overall (19.2% to 23.3%). Interestingly, we identified a significant improvement of RS in patients aged 65–74 yrs (5 yrs: 5.2% to 13.5%; $p < 0.001$). As surrogate for changes in management, we found an increase of allogeneic haematopoietic stem cell transplantations (1.4 to 7%) and clinical trial activities (25 to 29%) for elderly AML patients during the observation period. Our analysis indicates that recent progress made in management of elderly AML patients results in an improvement of survival on a population-based level in Switzerland and that therapeutic nihilism is not justifiable.