

Contents lists available at SciVerse ScienceDirect

## **Cancer Epidemiology**

The International Journal of Cancer Epidemiology, Detection, and Prevention

journal homepage: www.cancerepidemiology.net



## Oesophageal cancer survival in Europe: A EUROCARE-4 study

A.T. Gavin<sup>a</sup>, S. Francisci<sup>b</sup>, R. Foschi<sup>c</sup>, D.W. Donnelly<sup>a</sup>, V. Lemmens<sup>d</sup>, H. Brenner<sup>e</sup>, L.A. Anderson<sup>f,\*</sup> the EUROCARE-4 Working Group<sup>1</sup>

- <sup>a</sup> Northern Ireland Cancer Registry, Queen's University, Belfast, Northern Ireland, United Kingdom
- <sup>b</sup> Centro Nazionale di Epidemiologia, Istituto Superiore di Sanita, Viale Regina Elena 299, Rome, Italy
- <sup>c</sup> Evaluative Epidemiology, Istituto Nazionale Tumori, Milan, Italy
- <sup>d</sup> Comprehensive Cancer Centre South, Eindhoven, The Netherlands
- <sup>e</sup> German Cancer Research Center, Division of Clinical Epidemiology and Aging Research, Heidelberg, Germany
- <sup>f</sup>Centre for Public Health, Queen's University, Belfast, Northern Ireland, United Kingdom

## ARTICLE INFO

Article history:
Received 12 December 2011
Received in revised form 18 July 2012
Accepted 22 July 2012
Available online 19 August 2012

Keywords: Cancer Survival Europe Oesophagus Subtype Stage Trends

## ABSTRACT

Oesophageal cancer survival is poor with variation across Europe. No pan-European studies of survival differences by oesophageal cancer subtype exist. This study investigates rates and trends in oesophageal cancer survival across Europe. Data for primary malignant oesophageal cancer diagnosed in 1995–1999 and followed up to the end of 2003 was obtained from 66 cancer registries in 24 European countries. Relative survival was calculated using the Hakulinen approach. Staging data were available from 19 registries. Survival by region, gender, age, morphology and stage was investigated. Cohort analysis and the period approach were applied to investigate survival trends from 1988 to 2002 for 31 registries in 17 countries. In total 51,499 cases of oesophageal cancer diagnosed 1995–1999 were analysed. Overall, European 1- and 5-year survival rates were 33.4% (95% CI 32.9-33.9%) and 9.8% (95% CI 9.4-10.1%), respectively. Males, older patients and patients with late stage disease had poorer 1- and 5-year relative survival. Patients with squamous cell carcinoma had poorer 1-year relative survival. Regional variation in survival was observed with Central Europe above and Eastern Europe below the European pool. Survival for distant stage disease was similar across Europe while survival rates for localised disease were below the European pool in Eastern and Southern Europe. Improvement in European 1-year relative survival was reported (p = 0.016). Oesophageal cancer survival was poor across Europe. Persistent regional variations in 1-year survival point to a need for a high resolution study of diagnostic and treatment practices of oesophageal cancer.

© 2012 Elsevier Ltd. All rights reserved.