Oesophageal cancer survival in Europe: A EUROCASE-4 study

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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. Persistent regional variations in 1-year survival point to a need for a high resolution study of diagnostic and treatment practices of oesophageal cancer.

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1. Introduction

In Europe, the annual incidence of oesophageal cancer was 5.39 per 100,000 males and 1.13 per 100,000 females from 2000 to 2004 [1]. Oesophageal cancer is categorised into two main subtypes; adenocarcinoma and squamous cell carcinoma. The incidence of oesophageal adenocarcinoma, thought to be caused by exposure to gastro-oesophageal reflux [2], has increased dramatically over recent decades in developed countries [3]. Many countries, particularly those in Southern and Western Europe, have seen a decline in the incidence of oesophageal squamous cell carcinoma in men [3]; a cancer primarily caused by exposure to alcohol and tobacco smoke [4]. In a recent publication using data from the World Health Organisation (WHO) the European Union average mortality rate for males with oesophageal cancer was 5.4 deaths per 100,000; England and Wales, Scotland and Hungary had the highest male mortality rates in 2000–2004 (8.0, 10.9 and 8.4 deaths per 100,000, respectively), while Greece and Bulgaria had the lowest (1.5 and 2.0 deaths per 100,000, respectively) [1]. Oesophageal cancer survival is poor also displaying regional variation across Europe [1,5]. In EUROCASE-2, the 5-year relative survival rate for oesophageal cancer for cases diagnosed 1978–1989 was 10%; ranging from 3% in Estonia to 11% in Switzerland [5]. Survival is reportedly lower in those with an older age at diagnosis, advanced tumour stage and those not undergoing surgical resection [6]. Body mass, tobacco smoking, educational level [7] and recently alcohol [8] have also been suggested as possible influencing factors on survival. Few studies have investigated survival differences by oesophageal cancer subtype [6,9,10] and none have compared differences across Europe. We compared survival rates and trends in oesophageal cancer survival