



ORIGINAL ARTICLE

Trends in Laryngeal Cancer Incidence in a Health Area Between 2007 and 2013[☆]



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Received 29 March 2014; accepted 1 July 2014

KEYWORDS

Cancer;
Larynx;
Incidence;
Trends;
Risk factors

Abstract

Objective: Our aim was to study the trend between 2007 and 2013 in the incidence of larynx cancer in a health district of 300,000 inhabitants.

Material and method: With information from the hospital cancer registry for the reference health area, we calculated the incidence and subsequently performed a joinpoint regression using specific software.

Results: We found a statistically-significant downward trend with an annual percentage change of -10.83 LC 95% (-16.85 , -4.40) between 2007 and 2013.

Conclusions: We found that the tendency of incidence in larynx cancer decreased, mainly in males, where the results were statistically significant. These results should encourage continuing prevention of smoking and alcohol consumption.

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PALABRAS CLAVE

Cáncer;
Laringe;
Incidencia;
Tendencia;
Factores de riesgo

Tendencia de la incidencia del cáncer de laringe en un área sanitaria, entre los años 2007 y 2013

Resumen

Objetivo: Estudiar la tendencia de la incidencia entre 2007 y 2013 del cáncer de laringe de un área sanitaria de 300.000 habitantes.

Material y método: Con los datos del registro de cáncer del hospital de referencia del área sanitaria, se ha calculado la incidencia y posteriormente se ha hecho una regresión utilizando el programa informático joinpoint.

[☆] Please cite this article as: Gómez Bernal GJ, Bernal Perez M, Bezerra de Souza DL, Esteban Rodríguez E, Reboreda Amoedo A, Hernández Díaz R. Tendencia de la incidencia del cáncer de laringe en un área sanitaria, entre los años 2007 y 2013. Acta Otorrinolaringol Esp. 2015;66:127–131.

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Resultados: Se aprecia una tendencia descendente estadísticamente significativa con un porcentaje anual de cambio de $-10,83$ (IC 95%: $-16,85$, $-4,40$), entre 2007 y 2013.

Conclusiones: Se observa una disminución de la tendencia de la incidencia, fundamentalmente en hombres donde los datos son estadísticamente significativos. Estos resultados nos deben alentar a continuar con las campañas para la prevención del consumo de tabaco y alcohol.

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Introduction

This pathology represents around 1%–2% of all tumours diagnosed worldwide, and is most frequently observed in males. According to World Health Organisation data, cancer in this location ranks as eleventh out of all possible locations.¹ During recent years, there appears to have been a downward trend in the incidence of malignant tumours in this location in developed countries, essentially in men, as a consequence of major anti-smoking and anti-drinking campaigns. However, other possible risk factors exist, such as the human papillomavirus,² which may very likely impede the continual downward trend, if measures are not taken in this regard, bearing in mind the major personal suffering and financial cost involved. We therefore believe it is highly important to exhaustively control both the incidence and trend with regard to this pathology; in order to objectively quantify what we can qualify as a major health problem.

Material and Methods

Laryngeal cancer cases with codes CIE-O: 32 were used (all anatomopathological type cases were selected) taken from the register of Health Area III in Saragossa,³ the geographical framework of which corresponds to 46% of the province's population, including the rural and urban area, and which as a whole has approximately 300 000 inhabitants. The male/female ratio for Saragossa Area III as a whole is 1.07 in favour of the former. This is an ageing population, with a mean age of 42.38 if both sexes are taken into consideration, according to data from the National Institute of Statistics, for half of the period studied.

In 2009, in a study performed on a representative sample of the population of Saragossa Area III, the prevalence of smoking was estimated at 30.6%.⁴ Although we do not have data concerning the prevalence of mouth and neck infection from precursor variants of HPV cancer in our population, a study carried out in the North of Spain between 1990 and 2009, which studied HPV infection in oropharyngeal squamous cancers, demonstrated a low prevalence of this cancer although it referred to an increase in the same, from 1.8% in the period from 1990–1999 to 6.1% of cases diagnosed between 2000 and 2009.⁵ Other works estimate that there is a worldwide upward trend of HPV and this infection could be an important risk factor for cancers affecting the head and neck.⁶

The method we used was the calculation of laryngeal cancer rates adjusted to the world population by age and sex. This adjustment eliminates possible bias secondary to the ageing of the population studied. The large sample also offsets secondary bias against population movements.⁷ The Joinpoint Regression method was then used with software provided by the US National Institute for Cancer, to calculate cancer trends.⁸ This is a Poisson segmented regression method which, by using the years studied as the independent variable and the rates adjusted to the world population as the dependent variable is able to recognise the changes in incidence trends. Trend data are represented in percentages, called APC (annual percent change), which is the standard method applied when making comparisons between different geographical areas. The said percent changes are accompanied by confidence limits so that data obtained may be extrapolated.

Results

By observing the laryngeal cancer impact measurements (Table 1) we can observe the variation between 2007 and 2013 in both men and women. In 2007 the incidence of laryngeal cancer in men was 29.67 (adjusted to 18.09) cases per 100 000 inhabitants; and in women 1.96 (adjusted to 5.8) cases per 100 000 inhabitants. In 2008 it was 24.48 in men (adjusted to 13.4) cases per 100 000 inhabitants; and 3.14 in women (adjusted to 1.96) cases per 100 000 inhabitants. In 2009 it was 30.42 in men (adjusted to 20.16) cases per 100 000 inhabitants; and 1.25 in women (adjusted to 0.85)

Table 1 Cases, Incidence Rates (IR) and Adjusted Rates (AR) (Incidence and Adjusted Rates Are Expressed in Cases per 100 000 Inhabitants and Per Year).

Year	Men			Women		
	Cases	I.R.	A.R.	Cases	I.R.	A.R.
2007	40	29.67	18.09	4	1.96	5.8
2008	33	24.48	13.94	4	3.14	1.96
2009	41	30.42	20.16	2	1.25	0.85
2010	37	27.45	15.43	2	1.25	0.85
2011	24	17.89	10.01	2	1.25	0.85
2012	27	20.8	11.98	2	1.25	0.85
2013	18	13.2	6.78	3	1.96	0.74

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