

Oral Cancer in Ireland, 1984-1988

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Age standardised oral cancer incidence rates were calculated for the Republic of Ireland from data collected by the Southern Tumour Registry for the years 1984-1988. The annual incidence rates (per 100 000) for men were lip 3.8, tongue 1.2 and mouth 1.8 while the corresponding rates for women were lip 0.2, tongue 0.7 and mouth 0.5. The incidence of lip cancer is shown to be much lower than indicated by previously published Irish rates. In general, oral cancer incidence rates in Ireland are comparable to those reported for Denmark. The vast majority (94%) of cases were histologically verified. The results, along with recent findings on mortality, contradict the view that Ireland has a very high rate of oral cancer by west European standards.

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INTRODUCTION

A NUMBER of recent publications have highlighted disturbing increases in mortality and incidence rates for oral cancer among persons born since 1910. In 1989, Moller [1] examined the incidence of cancers of the tongue, other oral cavity and pharynx in Denmark from 1943 to 1985 and showed that, after a fall in all three cancer types in both sexes in the 1940s and 1950s, there has been a significant rise from the mid 1960s; the only exception being a fall in 'other oral cavity' cancer in women since the mid 1970s. Moller also examined incidence rates by median year of birth and found substantially increased rates in mouth and pharynx cancers in both men and women born since 1908. Hindle and Nally [2] showed an increase in the incidence of intra-oral cancer (defined as carcinoma coded as ICD-9 141, 143-146 and 149) [3] in women in England and Wales and a younger age of presentation in men. They also showed an increase, particularly among women, in the number of deaths from intra-oral cancer. Macfarlane *et al.* [4] had earlier also shown an increasing mortality from tongue cancer in younger men in Scotland. In 1988 the European Community (EC) Advisory Committee on the Training of Dental Practitioners published mortality data for oral cancer (ICD-9 140-149) for each member state of the EC [5]. The crude rates showed rises for both sexes in most countries from the mid 1960s to the mid 1980s but relatively stable rates for Northern Ireland and the Republic of Ireland. In a major review of epidemiology of oral cancer worldwide for the period 1955-1985, Boyle *et al.* [6] showed increasing mortality rates among younger men born since 1910 in 23 out of 25 countries examined. Further evidence of a reduction in the median age of patients with oral cancer was provided by Krolls and Hoffman in a study of almost 15 000 cases [7]. Mercer [8] in 1990 published data on mortality rates from oral cancer (defined as ICD-9 140-146 and 149) in the Republic of Ireland in the period 1979-1986 and found that the rates were relatively stable in both

men and women. However, the level of mortality was higher in men. He also examined the crude mortality rates for an earlier period range, 1952-1956 [9]. While lower figures in the more recent period can be partially explained by changes in coding from the 6th to 9th revisions of the ICD and also on account of a decline in the proportion of elderly people in the population (due to an increased birth rate and a reduced rate of emigration), there still seems to have been a large decrease in mortality. A comparison between the 1952-1956 figures [9] and the 1966 figures published by the EC Advisory Committee [5] also suggests a decrease. If both sets of data are reliable, then the mortality rate from oral cancer in Irish men almost halved over a period of 14 years.

MATERIALS AND METHODS

The Southern Tumour Registry (STR) is the only current source of comprehensive cancer incidence and prevalence data for Ireland. Established in 1975 at University College, Cork, the registry identifies all newly diagnosed cases of cancer in the counties of Cork and Kerry. These counties had a combined population of 536 894 in the 1986 census [10]; this represents approximately one seventh of the national population. Data are collected by nurse registrars from clinical and pathology records, and from death certificates. Thus the registration process used in the STR is active rather than passive and every effort is made to maximise the level of cover achieved. The registry is highly computerised and has been publishing annual reports since 1977. Site topography and morphology are coded using the ICD-O version of the International Classification of Diseases for Oncology (WHO, 1976) [11]. While the remit of the STR has recently been expanded to form the Irish National Cancer Registry, all incidence data presented in this paper are based on the counties of Cork and Kerry. It is envisaged that registration will be extended to the remaining 24 counties from January 1994.

This study examines all cases of oral cancer recorded by the STR over the 5-year period 1984-1988. Details of age, sex, site of primary, morphology, presence or absence of histological verification, and degree of secondary spread, if any, were noted for each patient. Age adjustment of incidence rates was based on a standard world population [12].

RESULTS

A total of 231 new cases of oral cancer were registered for the study area over the period 1984-1988. Almost three

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Table 1. Distribution of oral cancer patients by site and sex

ICD code	Site	Males		Females	
		No.	AA rate	No.	AA rate
140	Lip	62	3.8	5	0.2
141	Tongue	19	1.2	14	0.7
142	Major salivary gland	15	1.0	16	1.0
143	Gum	9	0.5	2	0.1
144	Floor of mouth	14	0.9	5	0.2
145	Other unspecified parts of mouth	6	0.4	5	0.2
146	Oropharynx	16	1.0	9	0.5
147	Nasopharynx	7	0.5	5	0.3
148	Hypopharynx	16	1.0	2	0.1
149	Pharynx and Ill def.	3	0.2	1	<0.1
All cases		167	10.4	64	3.5

AA = age-adjusted rates using a standard world population [13].

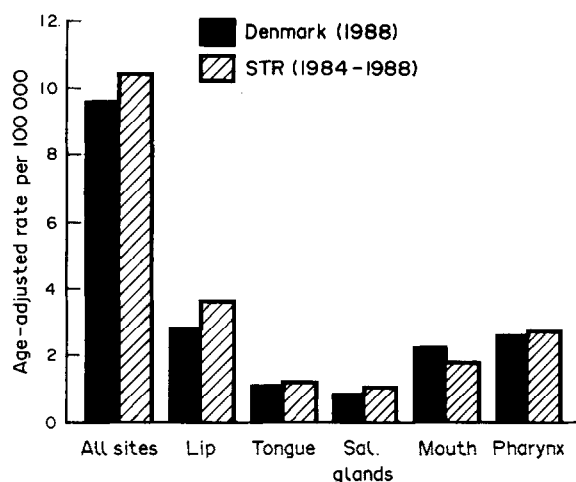


Fig. 1. Comparison of Danish and Irish male oral cancer rates.

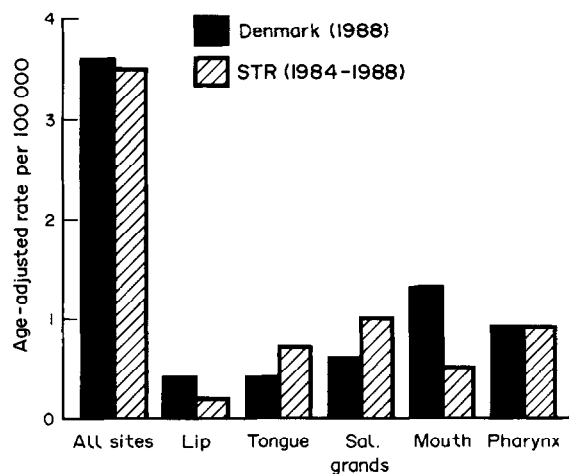


Fig. 2. Comparison of Danish and Irish female oral cancer rates.

quarters (72%) of the series were men. Thus the crude annual rate (per 100 000 population) of oral cancer was 12.4 for men and 4.8 for women. When age adjusted, the male and female rates reduce to 10.4 and 3.5, respectively. The breakdown of the 231 cases by site and sex is presented separately in Table 1.

Table 2. Distribution by age and sex

Age group	Males		Females	
	No. cases	Rate	No. cases	Rate
<30 years	3	0.4	2	0.3
30-39	5	4.6	2	1.2
40-49	18	13.0	5	3.8
50-59	31	27.1	8	7.2
60-69	45	33.5	18	15.8
70-79	58	81.3	20	23.0
80 or over	7	36.0	9	25.8

The most common sites of oral cancer among men are: lip, tongue, oropharynx and hypopharynx, major salivary glands and floor of mouth. The major salivary glands, tongue and oropharynx figure most prominently among women. A higher male rate is particularly evident for the lip, hypopharynx, floor of mouth and gum. These Irish rates of oral cancer are compared with the 1988 Danish Cancer Registry findings in Figs 1 and 2. The findings for the two countries are seen to be quite similar.

The joint age/sex distribution of the 231 cases is presented in Table 2. Thus the rate of oral cancer among men is seen to increase from the age of 50 upwards. The rate among women is comparatively low, up to 60 years. The decrease in the incidence of oral cancer among men aged 80 years or over is interesting. It may reflect a genuine reduction in the disease incidence for this elderly age group or it may be influenced by less comprehensive diagnosis, and hence registration, among the cohort.

The fourth digit of the ICD code allows one to obtain a more precise idea of the location of tumours. The potential of this extension is sometimes restricted if the registry coder has insufficient information exactly to locate the lesion. In such cases, the tumour is allocated a NOS (not otherwise specified) status and is coded to decimal point nine (0.9). The breakdown of oral cancer sites by the fourth ICD digit is shown in Table 3. Thus lip cancer is shown to be more frequently located on the lower lip. Cancer of the gum is seen to be slightly more common in the lower arch.

At the time of diagnosis, cancer had spread to the lymph nodes for 21% of the current series. However, the percentage of cases with such nodular involvement varied according to the site of primary. For example, none of the patients with gum cancer had lymph node secondaries while over one-third of those with tongue lesions had such extensions. Only 6 (3%) of the 231 oral cancer patients had secondary spread to sites other than a lymph node.

The vast majority (94%) of the 231 cases were histologically verified. The most common morphology was squamous cell carcinoma which accounted for 76% of the series. This was followed by adenocarcinoma (5%) and malignant lymphoma (5%). The latter morphology was most common in the oropharynx group, accounting for approximately one third of all such cases.

DISCUSSION

To date there has been little agreement regarding Irish oral cancer rates. Boyle *et al.* [6] quoted a figure of 88 deaths from oral cancer in Ireland during 1984. However, Mercer [8] examined official vital statistics for the same year [13] and identified 96 deaths (ICD-9 140-149). Because of possible

Table 3. Further breakdown of site of oral cancer

Main site ICD	Name	Sub-code	Name	%
140	Lip	0.0	Upper lip	6
		0.1	Lower lip	55
		0.3	Mucosa of upper lip	3
		0.4	Mucosa of lower lip	4
		0.9	Lip, NOS	32
141	Tongue	0.0	Base of tongue	6
		0.2	Border of tongue	6
		0.9	Tongue, NOS	88
142	Major salivary glands	0.0	Parotid gland	77
		0.1	Submandibular gland	7
		0.9	Major salivary glands, NOS	16
143	Gum	0.0	Upper gum	18
		0.1	Lower gum	27
		0.9	Gum, NOS	55
144	Floor of mouth	0.9	Floor of mouth, NOS	100
145	Unspecified parts of mouth	0.0	Cheek mucosa	18
		0.2	Hard palate	9
		0.3	Soft palate	27
		0.4	Uvula	9
		0.5	Palate, NOS	18
		0.9	Oral cavity	18
		0.0	Tonsil, NOS	72
		0.2	Tonsillar pillar	4
146	Oropharynx	0.3	Vallecula epiglottica	4
		0.4	Anterior surface epiglottis	12
		0.9	Oropharynx, NOS	8
		0.9	Nasopharynx, NOS	100
147	Nasopharynx	0.9	Nasopharynx, NOS	100
148	Hypopharynx	0.0	Postcricoid region	28
		0.1	Pyrimiform sinus	39
		0.8	Multiple sub-sites	5
		0.9	Hypopharynx, NOS	28
149	Ill defined sites	0.0	Pharynx, NOS	100

under reporting of deaths in parts of Ireland, Mercer suggested that the true number of deaths in 1984 was probably closer to 100. Thus the often quoted statement that Ireland has a relatively high death rate from oral cancer must be viewed with caution. Such references often quote Pindborg's figures [9] which in turn are derived from a 1959 WHO publication [14]; the figures are actually for the years 1952–1956 and have recently been quoted without any obvious reference to, or comment on, the age of the data [15]. Mercer's figures show the mortality rate over the period 1979–1986 in both men and women to be approximately twice the rates in England and Wales.

Previous reports from the STR have suggested an extremely high rate of lip cancer, especially among men. This is now thought to have been due partly to misreporting of some cancers of the skin of the lip (ICD-9 172 and 173) as lip cancers (ICD-9 140). The unfortunate terminology of the ICD-9 must almost inevitably lead to such confusions. The registry staff have reviewed all registrations of lip cancer from that period and now insist on histological verification before new cases of lip cancer (ICD-9 140) are registered. The previously published figures for histological verification (44% in both sexes) compare very unfavourably with other EC states [16], as shown in Table 4. Whelan *et al.* [17] showed Ireland to have the highest incidence of lip cancer in men in a comparison of cancer incidence rates for sites in 40 diverse populations. Our findings indicate that the rate of lip cancer among Irish men is similar to that seen for all West European countries.

Table 4. Percentage of lip cancers verified histologically in various European countries

Country	Males	Females
Ireland (Old data)	44	44
Denmark	96	92
Germany	97–99	99
Finland	99	98
France	98–99	99
Italy	87–99	83–99
Norway	97–99	99
Spain	85–93	76–99
U.K.	59–99	67–99
Yugoslavia	94	95

The STR has not been in operation for sufficiently long a period to facilitate an examination of time trends. Median birth date cohort studies are not possible; inadequate cover in the early years of the Registry reduces further the useful period for study of trends. Thus figures for the period 1984 to 1988 must be regarded as providing the baseline for Irish oral cancer incidence estimates.

Conclusions

Irish figures for oral cancer do not show any great differences from Danish figures. This contradicts an impression that Ireland had an especially high rate of oral cancer but is consistent with the recent data on mortality rates. Previous

reports of high rates of lip cancer in Irish men can now be regarded as probably inaccurate. While the counties of Cork and Kerry account for only 15% of the national population, the demographic structure and industrial profile of the region are similar to those of the country as a whole. Thus the annual rates of oral cancer are likely to be reliable estimates for the overall country. The expansion of the STR into the National Cancer Registry should facilitate the accurate estimation of oral cancer incidence in Ireland in the near future.

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