Re: Evaluating Gastric Cancer Misclassification: a Potential Explanation for the Rise in Cardia Cancer Incidence

Increased incidence of adenocarcinoma of the gastric cardia has been reported over the last few decades from several areas of North America and Europe *(1–2)*. A mortality study from the Swedish Cancer Registry, however, suggested that the observed upward trends can be, partly or largely, accounted for by changed accuracy of registration within gastric subsites *(3)*.

We considered, therefore, trends in incidence rates for various gastric subsites in the Cancer Registry of the Swiss Canton of Vaud (covering approximately 600 000 inhabitants in 1990 from the French-speaking part of Switzerland) over the period from 1976 through 1997. In this area, uniform criteria of classification have been adopted, and traditional attention has been focused on careful endoscopic and histopathologic examination of gastric lesions *(4–6)*.

Table 1 gives average age-adjusted (on the world standard population) incidence rates for various subsites of gastric cancer during three separate calendar periods. In both sexes, no appreciable change in incidence of adenocarcinoma of the gastric cardia was observed (3.1 cases per 100 000 males, and 0.5 cases per 100 000 females from 1976 through 1979 versus 3.2 and 0.1, respectively, from 1995 through 1997), while appreciable downward trends were observed for distal and other or unspecified gastric cancer sites.

These data, from a carefully surveyed European population, therefore do not support the existence of a systematic and major rise in incidence of cardiac adenocarcinomas *(3,7)*, confirming that—in proportional terms—the cancers of the gastric cardia have become

Table 1. Trends in age adjusted incidence rates of gastric carcinomas according to sex and subsite from Vaud, Switzerland, 1976–1997

Subsite	Sex*	Incidence rate (No. of cases)† 1976–1979	1985–1989	1995–1997	Annual change (%)‡
Cardia	M	3.1 (47)	2.8 (59)	3.2 (41)	−0.4
	F	0.5 (11)	0.5 (16)	0.1 (4)	−5.6
Distal	M	6.1 (90)	5.8 (124)	2.7 (42)	−3.9
	F	3.2 (68)	2.0 (68)	1.7 (37)	−2.9
Subsite, other and unspecified	M	3.9 (60)	2.1 (45)	2.4 (35)	−3.6
	F	2.0 (45)	1.0 (29)	0.5 (12)	−5.7
Total carcinomas, all subsites	M	13.1 (197)	10.8 (228)	8.4 (118)	−2.7
	F	5.7 (124)	3.5 (113)	2.3 (53)	−3.9

*M = male; F = female.
†Age-adjusted rates on the world population, per 100 000 population per year.
‡Average annual percentage change in a log-linear model.

more frequent because of the decline of distal (and unspecified) gastric cancers.

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RESPONSE

We appreciate the timely test of our hypothesis performed by Dr. Levi and colleagues. Their data seem to confirm that when tumor misclassification is kept at a minimum, there is virtually no increase in the incidence of cardiac adenocarcinomas. We will elaborate on the secular trends of cardiac and noncardiac gastric adenocarcinoma in Sweden in a separate paper, but we can reveal that we have made the same observation as Dr. Levi and his co-workers. It remains to be clarified whether the absence of a true upward trend is limited to northern and central Europe or whether all the worldwide increases can be attributed to misclassification.

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