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Letter to the Editor

Burden of extragonadal germ cell tumours in Europe and the United States

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Dear Sirs,

We read with interest the recent publication by Trama et al. about the burden of testicular, paratesticular and extragonadal germ cell tumours in Europe in this journal.[1] We did comparable analyses based on data from the Surveillance, Epidemiology and End Results (SEER) Programme, original nine registries for the years 1973–2007.[2] Many statistical figures on extragonadal germ cell tumours (EGCTs) are similar in the United States of America and Europe. For example, we also observed that mediastinal EGCTs had the worst 5-year relative survival (SEER: 58%, Europe: 53%). However, the estimated age-standardised incidence rate of EGCTs is considerably higher in the US than Europe. To quantify this difference, we calculated the ratio of age-standardised incidence rates (SEER estimate, whites, 1997–2007/European estimate 1995–2002) and corresponding 95% confidence intervals for males and females.[3] Among males, the EGCT rate in the US is 1.82 (95% Confidence interval [CI]: 1.58–2.10) times higher than in Europe. Among females, the EGCT rate in the US is 2.46 (95% CI: 1.94–3.12) times higher than in Europe. As rate estimates were quite precise in both the regions, random error is an unlikely explanation for this finding (see Table 1).

In contrast to Trama et al., we included EGCTs of the placenta (all non-dysgerminoma). 312 out of 567 EGCTs among white females (55%) during the period 1973–2007 originated from the placenta. When we exclude placental EGCTs, the age-standardised incidence of EGCT among white females for the period 1997–2007 decreases to 1.1 per million person-years (standard error [SE]: 0.10) resulting in a US: Europe ratio of 1.59 (95% CI: 1.25–2.02). We provide some hypotheses that might explain these differences. First, EGCTs are only rarely registered and can be easily miscoded as gonadal germ cell tumours if the topography coding of tumours is not intensively monitored. In contrast to the SEER programme, the European analysis was based on 64 cancer registries located throughout Europe with varying degrees of quality control and varying degrees of completeness of registration.[4] Second, EGCT cancer registry reports that contain only unspecified histology (e.g. carcinoma, not otherwise specified) cannot be included in the data analysis of EGCTs. A comparison of the number of extragonadal tumours with unspecified histologies at typical sites of EGCTs (e.g. mediastinum, pineal gland, retroperitoneum, brain) might give clues to this hypothesis. Finally, different prevalences of the, until now, unknown risk factors of EGCTs in the US and Europe may play a role.

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Table 1
Comparison of incidence rates of extragonadal germ cell tumours in the US and Europe.

	SEER 1997–2007 (whites)	Europe 1995–2002	US: Europe rate ratio (95% confidence interval)
Male cases (*N*)	384	n.r.	
Incidence rate per million/year (standard error)	3.4 (0.17)	1.87 (0.07)	1.82 (1.58–2.10)
Female cases (*N*)	185	n.r.	
Incidence rate per million/year (standard error)	1.7 (0.13)	0.69 (0.04)	2.46 (1.94–3.12)

n.r.: not reported; according to Trama et al., the overall number (males and females) of extragonadal germ cell tumours was 1019; all rates are standardised to the European standard population.

Interestingly, in a recent unpublished pooling project of nine population-based cancer registries in Germany of the years 1998–2008 which included 362,450,458 person-years, we estimated an age-standardised (European standard population) incidence rate for male EGCTs, female EGCTs including placental EGCTs, and female EGCTs excluding placental EGCTs of 1.79 (SE 0.1), 1.14 (SE 0.09), 0.79 (SE 0.08), respectively, which is very much in line with European-wide estimates.

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Conflict of interest statement

None declared.

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