

LETTERS

MOBILE PHONES AND BRAIN TUMOURS

Questions about selection, exposure, and tumour incidence

Vini G Khurana *neurosurgeon and associate professor*

Australian National University Medical School, Canberra, ACT 0200, Australia

Three questions arise about the update of the Danish cohort study of mobile phone use and risk of brain tumours.¹

Selection—To which subpopulation do the study's results apply? Subpopulations such as corporate users, children and adolescents, and people with a family history of cancer might be at a higher risk of developing a brain tumour after near field exposure to mobile phone electromagnetic radiation over a long time such as 10-20 years. However, figure 1 of the study shows that these more tumour predisposed subpopulations (206 174 or nearly 30% of the initial 723 421 eligible records) were excluded from participation or statistical analysis, or both.

Exposure—If phone records could not be obtained, why was the amount of mobile phone usage in this large cohort not estimated or extrapolated by some means? This omission is particularly important given that the 13 nation INTERPHONE study found a significantly increased risk of glioma in the highest decile of cumulative time that mobile phones were recalled as being used (>1640 hours),² a finding that supported a preceding meta-analysis of brain tumour risk in long term mobile phone users (10 years or more).³

Incidence—Does the greater than 10-fold increase in the number of brain tumours among long term subscribers in the five years of follow-up since the authors' previous study reflect an increase

in yearly tumour incidence in the cohort? The most recent incidence in Western populations ranges from 11 to 19 primary brain tumours per 100 000 person years.^{4 5} The authors previously reported 28 cases of brain tumours in long term subscribers up to 2002⁶; they report 316 cases with follow-up to 2007. What was the yearly incidence of primary brain tumours?

Competing interests: None declared.

- 1 Frel P, Poulsen AH, Johansen C, Olsen JH, Steding-Jessen M, Schüz J. Use of mobile phones and risk of brain tumours: update of Danish cohort study. *BMJ* 2011;343:d6387. (20 October.)
- 2 INTERPHONE Study Group. Brain tumour risk in relation to mobile telephone use: results of the INTERPHONE international case-control study. *Int J Epidemiol* 2010;39:675-94.
- 3 Khurana VG, Teo C, Kundi M, Hardell L, Carlberg M. Cell phones and brain tumours: a review including the long-term epidemiologic data. *Surg Neurol* 2009;72:205-14.
- 4 Dobes M, Shadbolt B, Khurana VG, Jain S, Smith SF, Smees R, et al. A multicenter study of primary brain tumor incidence in Australia (2000-2008). *Neuro Oncol* 2011;13:783-90.
- 5 Central Brain Tumor Registry of the United States. CBTRUS statistical report. Primary brain and central nervous system tumors diagnosed in the United States in 2004-2007. <http://cbtrus.org/reports/reports.html>.
- 6 Schüz J, Jacobsen R, Olsen JH, Boice JD Jr, McLaughlin JK, Johansen C. Cellular telephone use and cancer risk: update of a nationwide Danish cohort. *J Natl Cancer Inst* 2006;98:1707-13.

Cite this as: *BMJ* 2011;343:d7893

© BMJ Publishing Group Ltd 2011