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Occupational and residential exposure to electromagnetic fields and risk of brain tumours in adults: A case-control study in gironde, france.

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Abstract

The aetiology of brain tumours remains largely unknown. Among potential risk factors, exposure to electromagnetic fields is suspected. We analysed the relationship between residential and occupational exposure to electromagnetic field and brain tumours in adults. A case-control study was carried out in southwestern France between May 1999 and April 2001. A total of 221 central nervous system tumours (105 gliomas, 67 meningiomas and 33 neurinomas) and 442 individually age and sex-matched controls selected from general population were included. Electromagnetic field exposure (ELF and RF separately) was assessed in occupational settings through expert judgement based on complete job-calendar, and at home by assessing the distance to power lines with the help of a geographical information system. Confounders such as education, use of home pesticide, residency in a rural area, and occupational exposure to chemicals were taken into account. Separate analyses were performed for gliomas, meningiomas and acoustic neurinomas. A non-significant increase in risk was found for occupational exposure to EMF (OR=1.52, 0.92-2.51). This increase became significant for meningiomas, especially when considering ELF separately (OR=3.02; 95 percent CI =1.10, 8.25). The risk of meningioma was also higher in subjects living in the vicinity of power lines (<100m), even if not significant (OR=2.99, 95% CI 0.86, 10.40). These data suggest that occupational or residential exposure to ELF may play a role in the occurrence of meningioma.

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