Letters to the Editor

RE: “CELLULAR TELEPHONE USE AND RISK OF ACOUSTIC NEUROMA”

Christensen et al. (1) recently presented results on the use of cellular telephones and the risk for acoustic neuroma. However, in our opinion, several issues need to be clarified in the paper. Our main concern is that the study did not take into account exposures from cordless phones, and associations specific for ever use of analog or digital phones were not addressed. Furthermore, a truly nonexposed group was not used for comparison.

Of 130 eligible cases, 107 (82 percent) were interviewed. Two individually matched controls were used for each case. The response rate for controls was 64 percent or 214 controls. Thus, 334 controls must have initially been selected, a number that does not correspond to 1:2 matching.

Conditional logistic regression analysis was based on 106 cases and 212 controls, but it is not clear whether these numbers represented complete matched triplets. Use of cordless telephones was not assessed in contrast to our study (2–5). The output power of cordless phones is of the same order as that of digital mobile phones, and the calling times on the cordless phones are much longer, so it is an important exposure that is neglected in the study. Furthermore, the investigators did not have a clean group of “no exposure,” since subjects reporting less than two calls per week and less than 6 months’ use were included among the unexposed. This low-exposure group should be reported.

Only first use of the telephone operating system was reported (1, table 2). Certainly the results should have been given for subjects using both analog and digital telephones. In fact, in our large study (2–5), only 45.5 percent of the cases and 50.9 percent of the controls had used analog phones only, that is, no digital phones. The corresponding results for digital telephones were 73.3 percent and 75.3 percent for cases and controls, respectively.

Of the cases, 45 reported use of cellular telephones, but only four (8.9 percent) of them had used the analog type. This is a low number; for comparison, refer to the Danish cohort study of mobile telephone users (6). Of the 154 brain and nervous system tumor cases, 84 (54.5 percent) used analog phones, 20 (13.0 percent) used analog and digital, and 50 (32.5 percent) used digital phones; 104 (67.5 percent) had ever used an analog telephone. This number is considerably higher than that reported now, even if subjects with use of hands-free devices were excluded (numbers not reported). In the present study, 36 (80 percent) used digital phones, a much higher percentage than that in the cohort study. Furthermore, only two (4.4 percent) cases had used a cellular telephone for 10 or more years.

Among cellular telephone users, it was more common that the tumor appeared on the contralateral side of the head than that of the ear used during phone calls: for left-handed users, three ipsilateral and 11 contralateral tumors; for right-handed users, seven ipsilateral and 14 contralateral tumors. These numbers indicate misclassification of exposure. One early sign of acoustic neuroma is hearing loss and certainly deafness after operation. Cases tend to report the current use of ear, and therefore it is necessary to carefully assess such information over the years. In our study (2–5), supplementary information was obtained during phone calls by trained interviewers. Moreover, all cases and controls were sent an additional letter asking to clarify this issue with information on the ear used over the years. Assessment of exposure was not blinded as to case or control status in the Danish study because of face-to-face interviews.

A table with information is needed on, for example, those who never used and rarely used a cellular telephone and on the unexposed. Information is needed on the numbers excluded because of use of hands-free devices.

References

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In their recent article reporting results of a Danish case-control study of acoustic neuroma, Christensen et al. concluded “that there is no evidence for an association between use of cellular telephones and the risk of developing acoustic neuroma” (1, p. 282). This conclusion is not in line