Bias affects cell phone cancer risk findings

October 15 2009, by Lin Edwards

(PhysOrg.com) -- A group of South Korean and American researchers has found studies of possible links between cell phones and brain tumors and other cancers vary in quality, and those suggesting there is little or no risk may have some bias.

The scientists were from the National Cancer Center in Goyang, South Korea, the Seoul National University Hospital, Ewha Womans University and the University of California in Berkeley. The team carried out a meta-analysis of 23 published epidemiological studies, covering a total of 37,916 people who had been investigated to determine if there was a link between cell phones and cancer.

The findings of the analysis, published in the *Journal of Clinical Oncology*, were that the results of the studies varied widely, depending on who carried out and funded the research and what controls they had in place for bias and errors.

The researchers, led by Dr. Seung-Kwon Myung, divided the studies into "high quality" if the research blinded subjects of the study to bias (because the researchers did not know which subjects had tumors when they did their interviews), and "low quality" if the research did not counter bias, or if it was funded by the mobile phone industry.

They discovered that eight high quality studies found a 10-30% increase in tumors in people who regularly used cell phones over those who rarely or never used them. The same studies found an increased risk of benign (non-malignant) tumors in people who had been using the phones for ten years or more.

These high quality studies were funded by the Orebro University Hospital Cancer Fund in Sweden, the Orebro Cancer Fund, and the Swedish Work Environment Fund, but seven of the eight studies were carried out by Dr. Lennart Hardell, a Swedish oncologist. This leads to a supposition that the results might be related to the Swedish environment: many Swedes live in rural areas, and the radiation emitted by phones is greater in rural areas where the signal is weaker.

The "low quality" studies, which did not correct for bias, found no link, or found that people who used mobile phones faced lower risks of tumors than people who rarely or never used the phones. Myung's team said some of these studies were funded by the Global System for Mobile Communication Association and the Mobile Manufacturer's Forum.

The analysis also concluded the studies were not broad enough to prove a link exists between cancers and phone use, and larger cohort studies

would be needed to finally settle the question. Until now, the only published cohort study showed no link between tumors and phone use, but this study, from Denmark, used telephone subscription data rather than actual phone use.

The studies being analyzed were all case studies. This means the researchers divided their subjects into two groups: those who had brain tumors or other cancers and those who did not, and then interviewed the subjects about their use of mobile phones. The researchers concluded that cohort studies are needed, in which groups of phone and non-phone users are followed over a long time period to see which group develops cancer more often.

The use of cell phones and other cordless phones has increased dramatically over the last decade, with an estimated 4.6 billion users today, according to the United Nations International Telecommunication Union. There have been concerns the radiation emitted by the phones may cause health problems, but so far there is no proof, and the debate continues.

More information: Mobile Phone Use and Risk of Tumors: A Meta-Analysis, Seung-Kwon Myung et al., Journal of Clinical Oncology, doi:10.1200/JCO.2008.21.6366

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