A SURVEY AND AN INVESTIGATION TO EVALUATE THE RELATIONSHIP OF CANCER TO INDOOR AIR POLLUTION

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ABSTRACT

Indoor air pollution can be traced to prehistoric time when human first moved to temperate climate and it become necessary to construct shelter and use fire inside them for cooking warmth and light. Among the indoor pollutant sources, combustion sources are known to emit variety of hazardous pollutants causing numerous health impacts to living beings. Incomplete combustion of biomasses often produces carcinogenic polycyclic aromatic hydrocarbons which have been found in the kitchens, fire places, smoking lounges as well as in the shrines having incense sticks or candle burnings. In addition to the indoor exposures, the exposure of fine particles and fibers at the working place also have contributed to varies malignancies. This questionnaire-based survey was targeted to investigate the relation of cancer to human activities at home as well as conditions at the work place.

Cancer is an abnormal cell growth in body and it can be induced by various factors resulting from our living environment e.g. frequency of exposure to indoor air pollution. Among the known risk factors, for cancer are exposure to tobacco smoke, smoke from cooking activities (biomass, wood, cool etc,) and exposure to particles of work place.

Patients from Maharagama cancer hospital were surveyed over the period of April to August 2004. Among the surveyed group 128 patients were treated for lung cancer other 128 patients were treated for cancer other than lung cancer.

The collected data subjected to the case-control study. The case-control study is mainly based on the odds which are calculated between the case and control. The odds ratio for each odds was calculated with respect to the selected baseline (i.e. commonly use for comparison between two factors in our case risk factor and the disease). Secondly, the confidence interval was calculated by using SPSS computer package. Thirdly, Null Hypothesis and corresponding

Alternative Hypothesis were suitably selected for calculated odds ratio. If the confidence interval includes 1.0 then the Null Hypothesis is accepted i.e. there is no association between the factor and the disease. The odds ratio can be any value if it is large then the effect of the factor to the disease is very high.

Study suggests strong correlations for cancer with exposure to contaminated air at working place, exposure to fine powered particles, to fibrous materials and hazard chemicals, smoking, number of cigarettes smoked per day, duration (no. of years smoked), use of fire wood for cooking, while poor correlation exit between cancer with sex, age employed, smoking location, other indoor smokes (mosquito coils, joss sticks), cooking exposure to cooking in years, exposure to cooking per day, location of cooking place. But in the case of age except age category of 50 – 60 yrs, all other categories have increasing odds ratios suggesting that odds for having lung cancer increases with age.