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Title: Rising burden of lung cancer in non-smoking females in Kandy, Sri Lanka

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Body: Background Incidence of female lung cancer in Sri Lanka is steadily rising. Aim To identify the demography and histology patterns of lung cancer in a non-smoking female population. Setting Respiratory Unit, Teaching Hospital Kandy, Sri Lanka Method Retrospective study using bronchoscopy database 2011-12. Case definition criteria were positive evidence of malignancy in cytology/histology. Results Of 98 lung cancers diagnosed and referred to oncology over the two years, 43 (44%) were females. Despite strong radiological evidence, six of them could not be confirmed due to technical difficulties. Bronchoscopy showed macroscopic tumour in 32 (86%) at carina (2), main bronchi (4), lobar bronchi (9) and segmental bronchi (17). Of 37 diagnosed females (mean age of 58.6; range 31-96 yrs) three (8%) had metastatic disease from breast, colon and unknown site respectively. Of 34 (92%) primary lung cancers, non-small cell lung cancer (NSCLC,28), small cell lung cancer (SCLC,2) and poorly differentiated lung cancer (2) were diagnosed. Of NSCLC, ten were of squamous origin, while adeno carcinoma (6) and undifferentiated NSCLC (12) were seen. Discussion None were smokers nor had significant passive smoking exposure. However firewood usage in Kandy is 83% (Perera et al. Symposium on air resource management, Sri Lanka 2004). Environmental statistics recently identified Kandy as a city with significant air pollution, owing to its geography and motor traffic (Nandasena et al. BMC Public Health 2010,10:300). Conclusion This retrospective analysis reveals an alarming incidence of NSCLC among non-smoking females in Kandy. Future studies should aim to identify causal relationship of non-conventional risk factors.