19th Conference of the International Society for Environmental Epidemiology (ISEE)

Abstracts
of injury while working and 30% had history of respiratory illness. The pulmonary functions were significantly low in sweepers compared to loaders and drivers. Female conservancy workers had significant lower FEV values as compared to males. The Pulmonary function declined with increasing years of working. The pulmonary functions were significantly lower than their predicted values in conservancy workers, rag pickers and the residents living near the dumpsite.

Conclusions. This study has generated baseline health data of conservancy workers of the Chennai solid waste sector with a view to create a comprehensive profile of the health status and aid the concerned authorities in the implementation of specific interventions.

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ININFANT MORTALITY IN 27 ITALIAN MUNICIPALITIES WITH SOLID WASTE INCINERATORS (1981-2001)
**Bianchi F, 1 Minichilli F, 1 Pierini A, 1 Linzalone N, 1 Rial M, 1. (1) CNR National Research Council, Institute of Clinical Physiology, Epidemiology Unit, Pisa, Italy.

Objective. Recently an epidemiological study was carried out to verify the hypothesis of an association between infant mortality and residence near incinerators (Tango, 2004). Limits to the study were represented by rarity of death events and heterogeneity of infant mortality. However availability of mortality data and of an incinerator database has allowed performing an exploratory investigation.

Material and methods. Infant mortality was investigated over two periods (1981-1991, 1992-2001) in 27 municipalities with active incinerators in the 1981-2001 time frame. For each municipality the observed/expected ratio (O/E) was obtained. To calculate expected mortality, municipalities were included inside a 50 km radius circle. A pooled estimation of the O/E ratio obtained by meta-analysis was performed for the 27 municipalities. A multiple meta-regression model was used to analyse the study, activity and latency periods, the incinerator burning capacity, the number of resident newborns, the residence density, the deprivation index.

Results. Mortality analysis was performed on resident population for the whole period on approximately 250,000 infants under 1 year of age. In the overall period 1,673 cases of infant mortality were observed. The pooled estimation of the O/E ratio resulted 1.04 (CI 95%: 0.97-1.11) for total cases. The multiple meta-regression model showed the incinerator burning capacity as a statistically significant factor (p=0.011). Municipalities having incinerators with a burning capacity <50000 ton/year showed a higher mortality excess (O/E=1.11, CI 95%: 1.03-1.20) compared to municipalities with incinerators of < 50000 ton/year (O/E=0.95; CI 95%: 0.86-1.04).

Conclusions. Findings call for further insight by analytic epidemiologic studies to confirm possible association between infant mortality and living near incinerators.

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NON-HODGKIN’S LYMPHOMAS MORTALITY IN 25 ITALIAN MUNICIPALITIES WITH SOLID WASTE INCINERATORS (1981-2001)
**Bianchi F, 1 Minichilli F, 1 Pierini A, 1 Linzalone N, 1 Rial M, 1. (1) CNR National Research Council Institute of Clinical Physiology, Epidemiology Unit, Pisa, Italy.

Objective. Recently epidemiological studies suggested an increased risk of Non-Hodgkin’s Lymphomas (NHLs) among population residing near solid waste incinerators (SWIs) (Viel 2003, Floret 2003, Biggeri 2005). An ecological study on NHLs mortality in 25 municipalities with SWIs was conducted to test hypothesis of an association by using a large sample size of active incinerators in Italy.

Material and methods. NHLs mortality was investigated over four periods (1981-1985, 1986-1991, 1992-1996, 1997-2001) in 25 municipalities, according to the SWI time of activity and the NHL latency period (15 years time frame to be conservative). A total of 1,830 NHL-related deaths (949 males and 881 females) was observed in the overall period (1981-2001). For each municipality the SMR adjusted for age was obtained. To calculate expected mortality, municipalities were included inside a 30 km radius circle. A pooled estimation of the SMR obtained by meta-analysis was performed for the 25 municipalities. A multiple meta-regression model was used to analyse the study, activity, and latency periods, the incinerator burning capacity, the number of resident, the residence density, and the deprivation index.

Results. The pooled estimation of the SMR resulted 1.08 (CI 95%: 1.01-1.11) in males and 0.96 (CI 95%: 0.90-1.03) in females. The multiple meta-regression model showed the incinerator burning capacity and the latency period to be statistically significant factors (p<0.05). Of the four latency periods considered, the 15-20 and 20-25 periods showed statistically significant excesses of NHL mortality in men (SMR=1.10; CI 95%: 1.00-1.21). Municipalities having SWIs with a burning capacity of <50000 ton/year showed a higher mortality excess for men (SMR=1.14; CI 95%: 1.00-1.21) compared to municipalities with SWIs >50000 ton/year (SMR=1.04; CI 95%: 0.95-1.13).

Conclusions. Empirical evidence of NHL mortality excess in men and differences related to the latency periods and to the SWI capacities need to be further investigated.

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WASTE AND HEALTH IN SOUTHERN ITALY
**Mitsis E, 1 Martuzzi M, 2 Bianchi F, 2 Minichilli F, 2 Comba P, 1 Fasso L, 1. (1) National Institute Of Health, Department Of Environment And Primary Prevention, Rome, Italy (2) National Research Council, Ifc-epidemiology Unit, Pisa, Italy (3) World Health Organization, European Centre For Environment And Health, Rome, Italy.