European Respiratory Society
Annual Congress 2012

Abstract Number: 493

Publication Number: P1046

Abstract Group: 6.2. Occupational and Environmental Health

Keyword 1: Occupation **Keyword 2:** Environment **Keyword 3:** Air pollution

Title: The effect of particular matter pollution on emergency room visits due to COPD and asthma and the association with hospitalization rate in Düzce City

Dr. Ege 3854 Gulec Balbay egegulecbalbay@gmail.com MD [1], Prof. Dr Peri 3855 Arbak periarbak@hotmail.com [2], Prof. Dr Oner 3856 Balbay oner.balbay@gmail.com [2] and Dr. Ali Nihat 3857 Annakkaya annakkaya@gmail.com [2]. [1] Chest Diseases, Duzce Ataturk State Hospital, Duzce, Turkey and [2] Chest Diseases, Duzce University Faculty of Medicine, Duzce, Turkey .

Body: To investigate the effect of particuler matter levels on patients with COPD and asthma applied to emergency department and relation with hospitalization rate in Duzce city. Between January-December 2009, the patients diagnosed as COPD and asthma at State Hospital were retrospectively evaluated. The monthly average values of particulate matter obtained from the official data. 61.4% of total 2499 cases were male. The average PM10 concentration of Duzce city was highest in November (184 mgr/m3) and was lowest in July (41 mgr/m3). The rates of COPD and asthma were 77.8 % and 22.2%, respectively. COPD rates in males and females were 85.1% and 66.4%, respectively. Asthma was observed in 33.6% of females while 14.9% of males were diagnosed as asthma (p=0.000). The admittance rates to the emergency department for females and males were 69.3% and 66.2%, respectively (p>0.05). The patients with COPD were frequently applied in winter (27.9%) while the patients diagnosed as asthma admitted in autumn (p=0.010). While particulate matter was over 100 μgr/m3, the odds ratios for COPD and asthma diagnosis were 1.039 (0.990-1.091) and 0.878 (0.749-1.029), respectively. Only the age was found an independent factor (β=-0,382, t=-20,645, p=0.000). COPD patients were older (r=-0,382, p=0,000). The factors independently effective on diagnosis according to univariate analysis were gender (R=10,664, F=65,182, P=0.000) and season (R=0,700, F=4,278, p=0.005). It seems that increase in PM10 concentration causes an increase in admission to emergency department with the diagnosis of asthma and COPD.