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Tandoor Smoke Exposure in Female Asthmatic Patients: A Cross-Sectional Study from Eastern of Turkey

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Objectives: Numerous studies with varying associations between domestic use of solid biomass fuels (wood, dung, crop residue, charcoal) and respiratory diseases have been reported. The aim of this study was to evaluate tandoor smoke exposure in female asthmatic patients who live in eastern of Turkey.

Methods: This prospective study was conducted with the approval of a university hospital ethics committee between December 2016 and January 2018. The study included 522 female patients with Asthma who admitted to Pulmonology Department. Patients without a diagnosis of asthma, children and men were not included in the study. The following parameters of all patients were evaluated: age, body mass index (BMI), comorbidity, living place, educational status, occupation, smoking status (smoker, ex-smoker, never smoker), exposure to passive smoke, tandoor smoke exposure, using cow dung (heating, cooking, baking bread), pulmonary function tests and complete blood count parameters.

Results: Of 522 patients, 219 (42%) were using the cow dung for various purposes. 148 (28.3%) patients were using the cow dung for both heating, cooking and baking bread. 102 (19.5%) patients were smoker, 58 (11.1%) were ex-smoker and 362 (69.3%) were never smoker. 242 (46.4%) patients had exposure to passive cigarette smoke. 165 (31.6%) patients were using the tandoor, 106 (20.3%) had previously used a tandoor and 251 (48.08%) patients had never used it. Using cow dung was significant according to living place ($p<0.001$). 81.7% (179) of the patients who were using the cow dung were living in the village. 72.9% (221) of the patients who did not use the cow dung were living in the city. In both groups, most of the patients were housewives. 44.5% (97) of the patients who used cow dung were illiterate and 35.3% (107) of the patients who did not use were primary school graduates. The difference between the groups in terms of living place, occupation and educational status was significant ($p<0.001$). Hemoglobin was higher in asthmatic patients using cow dung. MPV was higher in patients who did not use cow dung. FEV₁, FVC and FEF 25% were significantly higher in asthmatic patients who did not use cow dung. FEV₁/FVC was higher in patients who used cow dung.

Conclusion: Women with asthma who live in rural areas and are illiterate and housewives are more exposed to tandoor smoke.

Keywords: Asthma, female, tandoor smoke exposure