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Title: Investigation of lung involvement with DLCO in women exposed to biomass smoke

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Body: Background and Aim; it is predicted that half of the world population and more than 90% of the rural population in developing countries uses biomass fuels. Biomass smoke is a mixture of complex particles and gases that are harmful to human health especially for lung. We aimed to search the pulmonary diffusing capacity (DLCO) of womens who exposed to biomass smoke. Methods; All participants' history of tobacco and biomass smoking, physical examination, respiratory function tests including DLCO test were investigated. Including criteria were; exposed to biomass smoke, no have smoking history, have no respiratory problem. Study group was consisted of 65 women, and control group was consisted of 25 women. Results; Mean the biomass smoke exposure densities was $17,6 \pm 6,8$ hour/years. Mean age of study group was $50,7 \pm 10$ and control group was 45 ± 60 years. The ratio FEV1/FVC of study and control groups were $87,4 \pm 6,9$ %, $92 \pm 7,3$ with respectively ($p=0,006$). FEV1/FVC rate was above % 70 and FVC values were above %80 for all patients. Mean DLCO values of study and control goupes were $23,6 \pm 0,7$ (% $110 \pm 3,5$) ml/sn/mmHg and $26,1 \pm 10$ (% $117,5 \pm 5,6$) ml/sn/mmHg with respectively ($p>0,05$). There were DLCO values of below % 80, study group 15 %, while the control group 0 % ($p<0.01$). Conclusion; DLCO can be lower in women who exposed to biomass smoke, although respiratory function test is normal. Reduction of diffusion capacity of these womens may be the first warning for future respiratory problems.