OZ-P-075: ULTRAHIGH / ULTRASHORT AND SHORT TIME OZONE EXPOSITION – IS IT COMPARABLE?

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Because of its strong oxidative capacity, ozone is one of the most important air pollutants. Therefore ozone is used in many studies and in very different exposition forms concerning time and/or concentrations of ozone. To study to what extent ultrahigh/ultrashort exposition is comparable with other short time exposition forms, we investigated the expression of SP-A and SP-B, two important proteins of the surfactant layer of the lung, after different ozone exposition. Sprague Dawley rats were exposed to 8 h 3 ppm, 8 h 1.5 ppm, 12 h 0.6 ppm, 24 h 0.6 ppm, 3 min 1700 ppm ozone 4 h rest and 3 min 1700 ppm ozone 24 h rest. We analyzed SP-A and B by immunoblot using protein extract of whole lung tissue. All forms of exposition increased time and concentration dependent intracellular SP-A (123 % to 165 %) and SP-B (145 % to 257 %). Conclusion: All exposition forms increased the expression of SP-A and SP-B. Specially in case of SP-A, the values of the ultrahigh/ultrashort exposition are comparable with the increases caused by the other exposition forms. To study common effects of ozone to lung function it is possible to choose ultrahigh/ultrashort exposition and therefore to avoid the amount of time and work needed by other exposition forms.