

Personal care products in matched human and environmental samples collected under the framework of RESPIRA Project

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The indoor environment is an important source of exposure to microbial communities that may deleteriously affect human respiratory health. Recent studies demonstrated that the microbial community structure can be altered by the use of household products such as antimicrobial agents. Hence, in order to understand the modulation of the indoor microbiome by household products and their joint effect in the respiratory status of COPD patients we evaluated the levels of antimicrobials agents in dust samples and matched urine samples from patients with COPD. Overall, the concentrations in dust samples are one to two orders of magnitude higher than the concentrations in human urine. Triclosan was detected in all the dust samples, triclocarban was detected in 82% of the dust samples and parabens in 90% to 100% of the samples. In urine samples, triclosan was detected in 56% of the samples, triclocarban was always below detection limit (0.25 ng/mL) and parabens detection frequency varied widely (23-84%). Interestingly, the highest level reported in dust for triclosan (1200 ng/g) corresponded to the house of the patient with the highest triclosan concentration in urine (140 ng/mL) and at that house high levels of antibiotic resistant bacteria were found. Such results suggest that the use of antimicrobials might be associated with the presence of resistant bacteria and thus deserve to be further studied.

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