

PEOPLE ON THE GARBAGE DUMPS OF CAIRO: A TOXICOLOGICAL IN VIVO MODEL?

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SUMMARY

In the outskirts of Cairo, some 40.000 people live on garbage dumps. These people form a closed population whose socio-economic problems are identical. The pollutants are evenly distributed. Up to 30 % of the garbage on the polluted area, which cannot be recycled, is burned, resulting in a high concentration of pollutants in the environment. The concentrations of heavy metals, dioxins/furans, PCB, PAH in dust deposit and soil were measured as well as the air pollutants SO₂, HCl and CO. It was shown that while the systemic immune system is only affected to a very small degree, secretory immunoglobulin A is strongly affected by the immissions. It could be demonstrated also an increased readiness for allergic respiratory disease, through the proof of hyperreactive mucous membranes. In the polluted area, 58 % of the examined children were affected, whereas in the control area only 22 % displayed a hyperreactive mucous membrane. Also the concentration of NANA (N-acetyl-N-neuraminic acid) in the serum, as a unspecific marker of cell irritation, was high in the serum of children from the polluted area.

Most of the pollutants detected can also be observed in the industrialized regions, especially in combination with incinerating plants. In this way, this study suggests the synergistic effects of pollutants.

Key words: heavy metals, organic pollutants, toxic waste, human exposure

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