INTERNATIONAL SEMINAR
ON THE PROTECTION OF HOSPITAL WORKERS FROM
OCCUPATIONAL RISKS RELATED TO CARCINOGENS
3 September 2021

Authors:
Eline Verscheure[1,a], Matteo Creta[1,a], Jeroen Vanoirbeek[1], Katrien Poels[1], Radu-Corneliu Duca[1,4,b], Lode Godderis[1,5,b*]

Presenting author:
Prof Dr Lode GODDERIS, Chief Executive Officer
Groep IDEWE (Belgium)

The unintended exposure to cytostatic drugs in healthcare

Introduction: Antineoplastic drugs are often used in the treatment of a wide range of diseases such as cancer, multiple sclerosis, psoriasis and systemic lupus erythematosus. However, the treatment of patients with these harmful agents can also lead to unintended exposure of non-patient populations such as healthcare workers and family members living together with patients treated at home or going home after treatment. Therefore, we first aimed to map the environmental contamination in two university hospitals in Algeria and Belgium. Second, we designed a study to assess the unintended exposure and effects thereof in home nurses and family members in a home setting.

Methods: To evaluate the environmental contamination, surface samples as well as dermal samples and samples from personal protective equipment were collected in two Algerian and Belgian university

[1]Centre for Environment and Health, Department of Public Health and Primary care, KU Leuven, Leuven, Belgium

[2]Centre Hospitalo-universitaire, Service Médicine du Travail, Université Abou Bekr Belkaid Tlemcen, Tlemcen, Algeria

[3]Faculty of Medicine, TOXICOMED research laboratory, Université Abou Bekr Belkaid Tlemcen, Tlemcen, Algeria

[4]Unit Environmental Hygiene and Human Biological Monitoring, Department of Health Protection, National Health Laboratory (LNS), Dudelange, Luxembourg

[5]Idewe, External Service for Prevention and Protection at work, Heverlee, Belgium

hospitals by use of a swab. Unintended exposure of home nurses and family members of patients treated at home or going home after treatment in the hospital will be studied by environmental and biological monitoring. In addition to exposure assessment, the effects of exposure will be studied through DNA-adducts, chromosomal aberrations and alterations in DNA-methylation.

Results and conclusion: The concentration for 5-fluorouracil ranged from <LOQ – 22.22 ng/cm² for Algeria and <LOQ – 117.8 ng/cm² for Belgium. In total, 45% of the Algerian samples had 5-fluorouracil concentrations exceeding 0.1 ng/cm², while only 16% of the Belgian samples had concentrations higher than 0.1 ng/cm². In the future, this information can be further complemented with biological monitoring to get an insight in the actual amount of antineoplastic agents entering the body and potentially causing effects.

[1]Centre for Environment and Health, Department of Public Health and Primary care, KU Leuven, Leuven, Belgium

[2]Centre Hospitalo-universitaire, Service Médicine du Travail, Université Abou Bekr Belkaid Tlemcen, Tlemcen, Algeria

[3]Faculty of Medicine, TOXICOMED research laboratory, Université Abou Bekr Belkaid Tlemcen, Tlemcen, Algeria

[4]Unit Environmental Hygiene and Human Biological Monitoring, Department of Health Protection, National Health Laboratory (LNS), Dudelange, Luxembourg

[5]Idewe, External Service for Prevention and Protection at work, Heverlee, Belgium