

# Work practice and some adverse health effects in nurses handling antineoplastic drugs

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## KEY WORDS

Antineoplastic drugs; nurses; occupational exposure; work practice; symptoms

## SUMMARY

**Background:** *Widespread use of antineoplastic drugs has led to higher health risks of personnel who prepare and administer these drugs. The short-term, non-specific health effects in nurses handling antineoplastic drugs (AND) have been documented. Objectives:* *To establish work practices and preventive measures for nurses handling antineoplastic drugs and to determine the risk of developing symptoms. Methods:* *In eight Belgrade hospitals, 263 nurses were selected (response rate 90.1%) for the study. Among these, 186 were involved in preparation and administration of AND, and 77 were not exposed. Data on exposure, work practice, safety precautions, and symptoms were obtained via a questionnaire. The mean age of exposed nurses was lower than in a control group (35 vs. 39 yrs). Results:* *Only 38% of all nurses used vertical laminar safety cabinets while mixing AND, 82% used gloves, and 57% masks. Special medical rooms for mixing AND, written instructions and special containers for waste material were available only sporadically. No exposure monitoring had ever been performed in any hospital or department. Periodic medical check-ups were rare (24.7% of all nurses). In exposed nurses ORs adjusted for age, smoking habit and shift work were significantly elevated for almost all symptoms, mostly for the following: hair loss (OR=7.14), skin rash (OR=4.70), and light-headedness (OR=4.33), as well as the disappearance of symptoms during the weekend (OR=4.78). The mean number of symptoms revealed an exposure-effect relationship, with the highest number of symptoms in daily exposed nurses and lowest in non-exposed nurses (6.3 vs. 3.1) ( $p<0.001$ ). Conclusions:* *Our results indicate without doubt that exposed nurses reported more symptoms than non-exposed nurses, an effect that was not dependent on age, smoking, or night shift. The use of safety precautions was inadequate and reflected the lack of awareness of potential hazards due to occupational exposure to AND.*

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