

Antineoplastic and other hazardous drugs: risk potential and exposure – less is more!

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background and aim

Chemicals are subject to mandatory requirements for hazardous substances (GHS; Globally Harmonized System of Classification and Labelling of Chemicals). By contrast, references to measures to protect hospital staff from the hazardous aspects of drugs such as carcinogenicity, mutagenicity or reproductive toxicity (CMR) in the summaries of product characteristics (SPCs) are meagre; intuitive concepts for nurses in a hospital are scarce.

The aim of this project was first to **establish a concept, which assesses the hazards to staff while handling CMR-drugs and second to define appropriate measures based on this, which minimize the exposure to substances with CMR-potential.**

concept

The drugs with CMR-potential have been marked in the drug administration guides provided by the hospital pharmacy. Additionally, the activities, paired with the diverse dosage forms, have been classified in risk categories from 1 (highest) to 6 (lowest) (own classification; presented as pyramid).

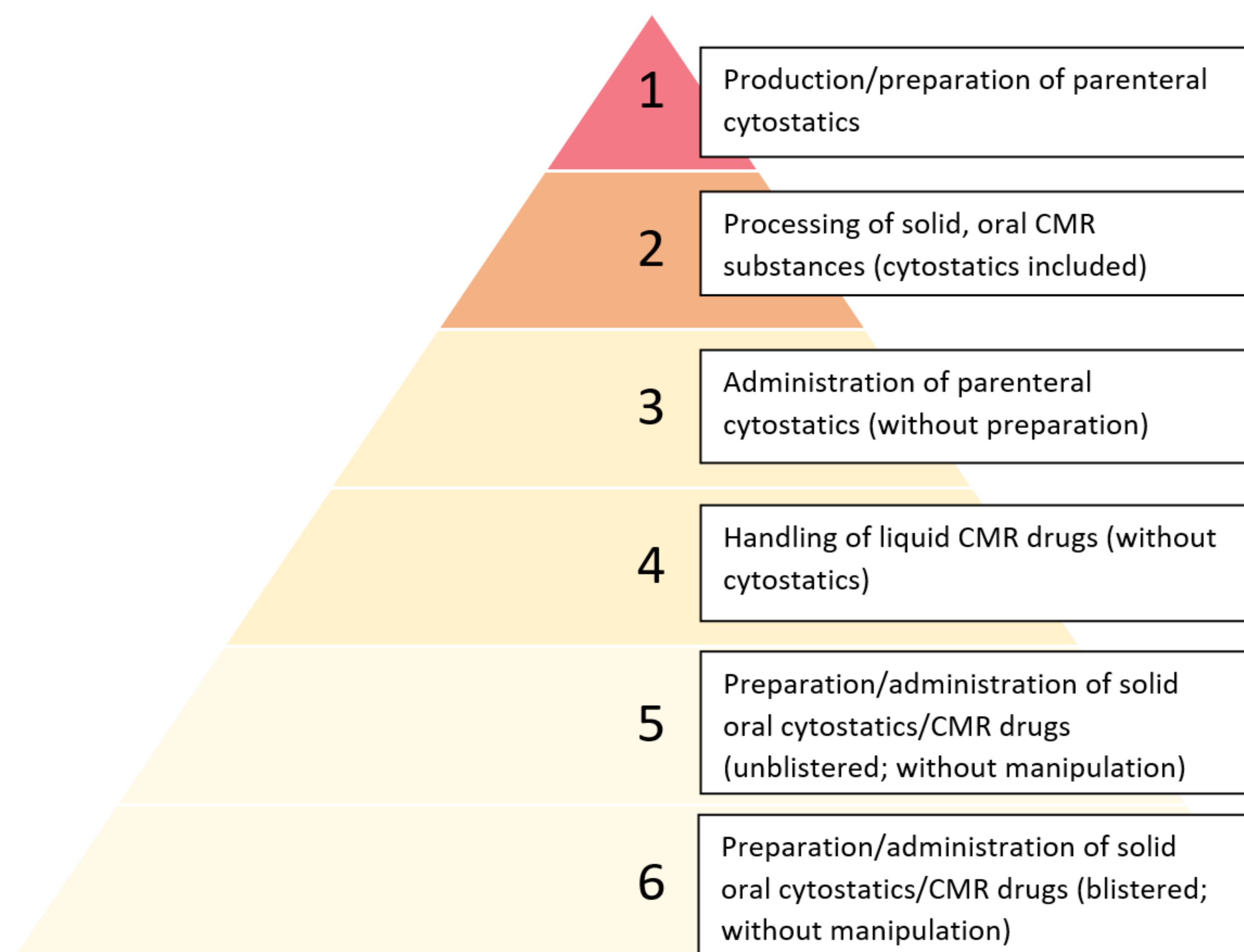


Figure 1: pyramid of the risk categories 1-6; risk assessment of the activity paired with the diverse dosage forms.

Measures to minimize the risk for the staff while handling CMR-drugs were specified according to the STOP principle: Substitution, Technical/Organisational/Personal protection measures. The latter are dependent on the classification of the «dosage form/activity» in the risk categories determined by the hospital pharmacy.

Conclusion and relevance

This procedure for the risk assessment of drugs with CMR-potential and the introduction of safety measures depending on the classification of dosage form/activity in risk categories results in a minimization of the risk to staff while handling these drugs. The risk, which is per definition the product of the risk potential and exposure, tends towards zero with the introduced measures.

methods

To achieve this, an **assessment of the intrinsic risk potential of the substances** used therapeutically in the hospital was conducted (1; 2). Subsequent to this, the **activities using the different dosage forms of CMR-drugs were evaluated** and measures for **exposure minimization** were specified accordingly.

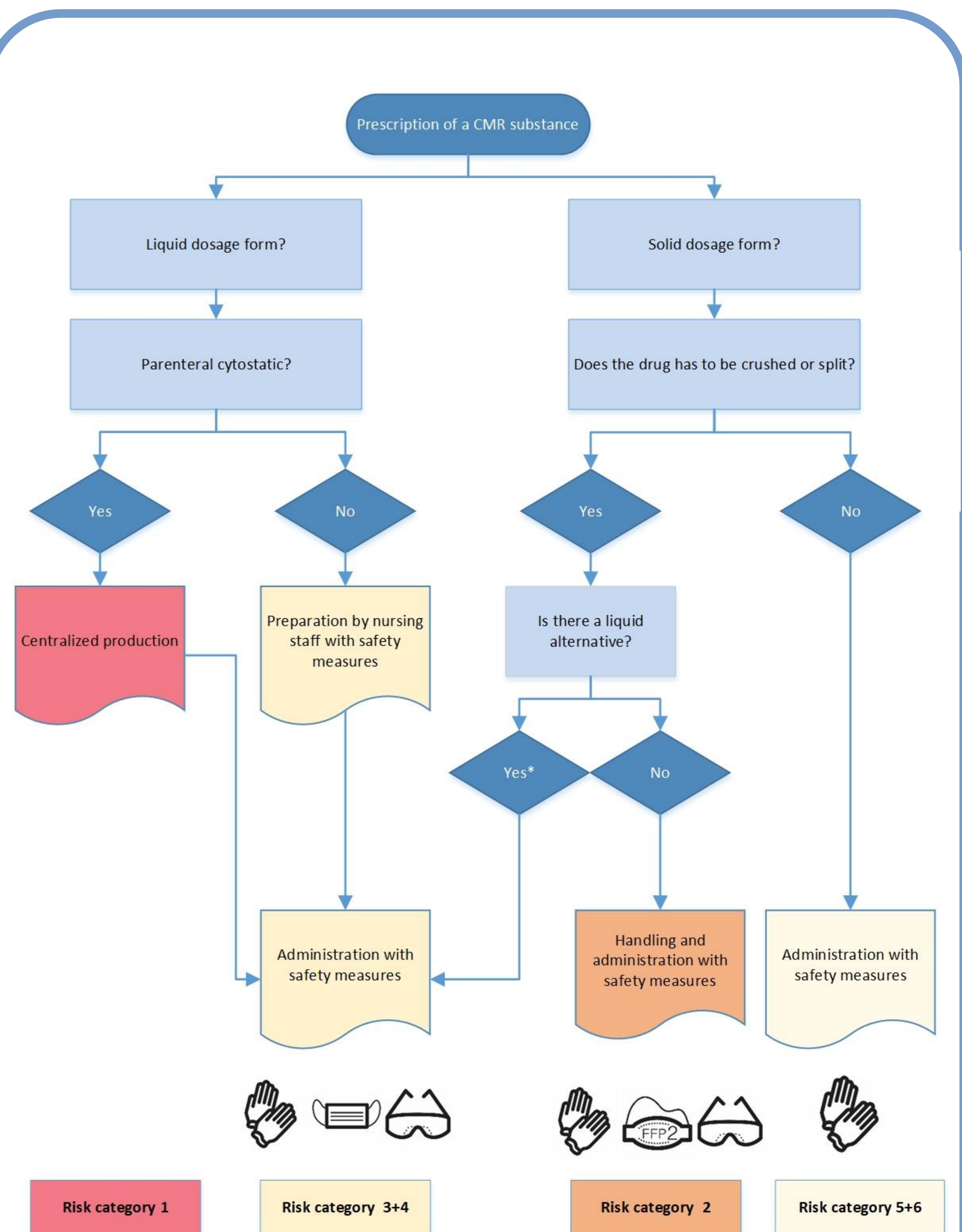


Figure 2: process from the prescription of a CMR substance to the administration; defined personal safety measures included. * change of the medical prescription by a physician

References and acknowledgements

- We thank E. Whittome for the very helpful translation and B. Kissling and P. Massarotto for the intense discussions.
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 - (2) National Institute for Occupational Safety and Health (NIOSH). List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings. [Online] 2016. <https://www.cdc.gov/niosh/docs/2016-161/>.