

# DESENSITIZATION TO ANTINEOPLASTIC DRUGS: CLINICAL EFFICACY ANALYSIS

L. ROSSI1, A. DE LUCA1, L. JACOPO1, C. ORSI1, F. TOSONI1, R. BALLERINI1, V. IANIELLO1, M. CECCHI1.  
1AZIENDA OSPEDALIERO UNIVERSITARIA CAREGGI, PHARMACY, FIRENZE, ITALY.



## Background and importance

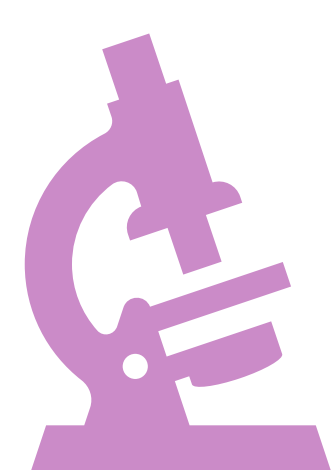
Hypersensitivity reactions to antineoplastic drugs are a major cause of treatment discontinuation and may negatively affect clinical outcomes, as patients may be forced to switch to less effective or less tolerated therapies. Drug desensitization is a therapeutic strategy for sensitized patients. Desensitization protocols involve administering the drug divided into several bags to be infused in sequence, with a dilution of 1:1000, 1:100, and 1:10 until the therapeutic dose is reached. This gradual increase in concentration modulates the immune response, inducing a transient tolerance that prevents or minimizes hypersensitivity reactions.



## Aim and objectives

The aim of this study is to describe the use of desensitization protocols in an oncology unit of a Tuscan hospital in the two-year period 2023–2024 and to assess their clinical impact by evaluating how many patients were able to continue the planned antineoplastic therapy thanks to desensitization.

## Material and methods



A retrospective analysis was conducted on all oncology prescriptions sent to the antineoplastic drugs unit in 2023–2024. Data on each desensitization procedure were extracted from the preparation logs generated by the clinical software for oncology protocol management. Variables collected included number of bags, drug type, dilution scheme, number of procedures per patient and treatment tolerance. All information was processed in a spreadsheet.



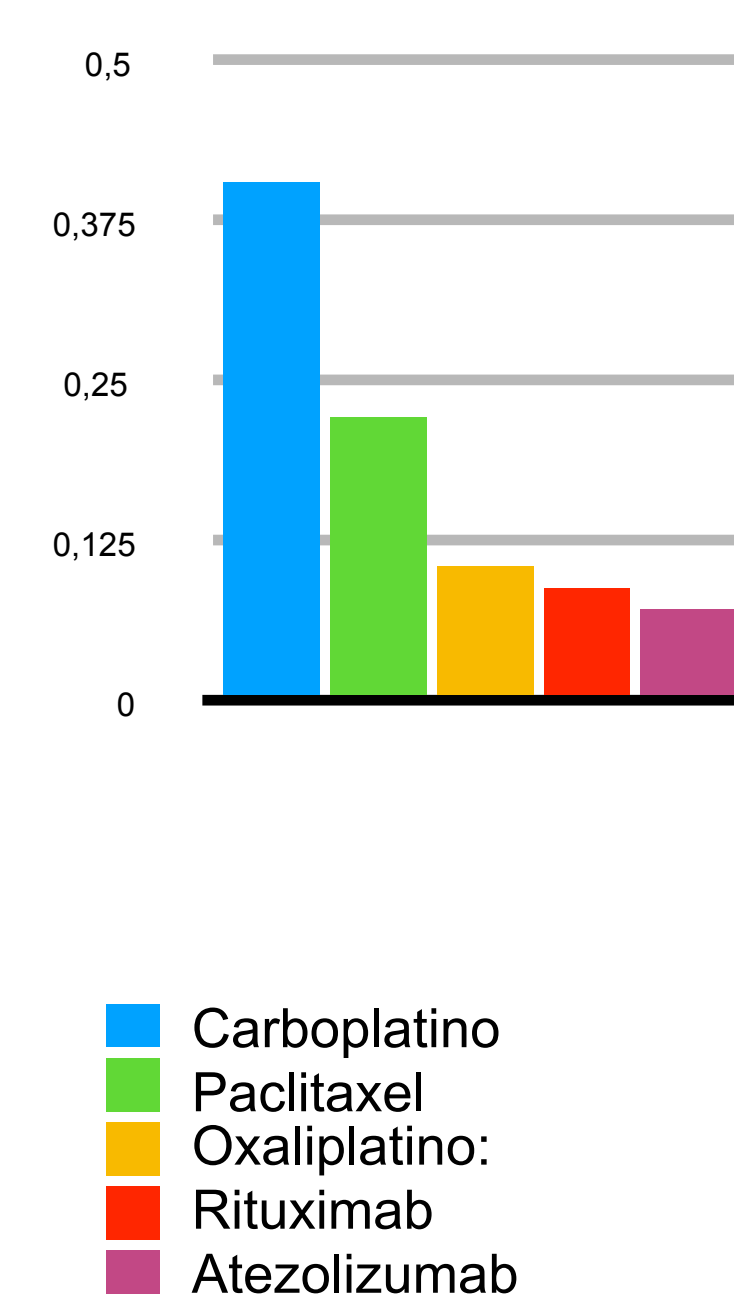
## Results



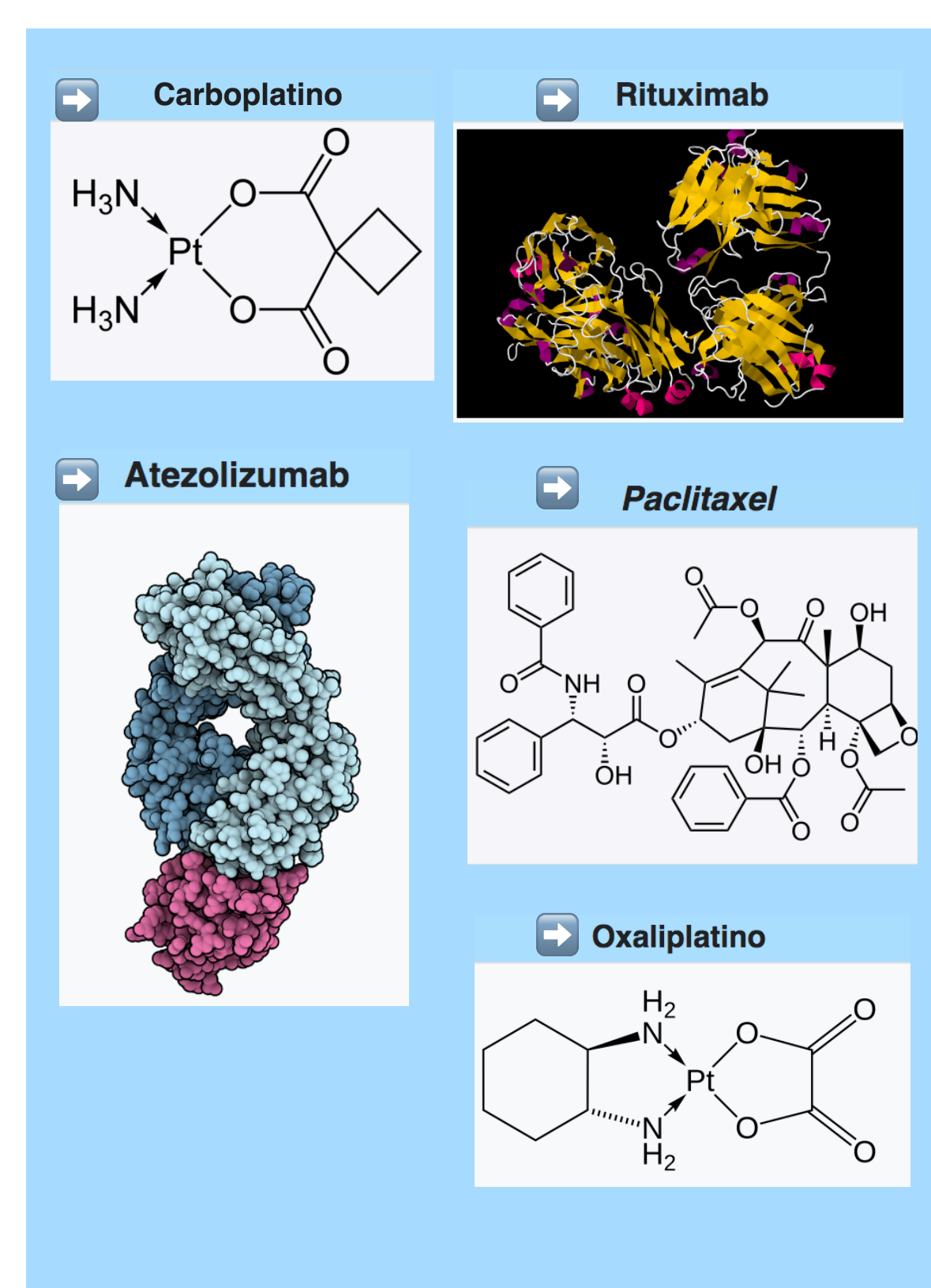
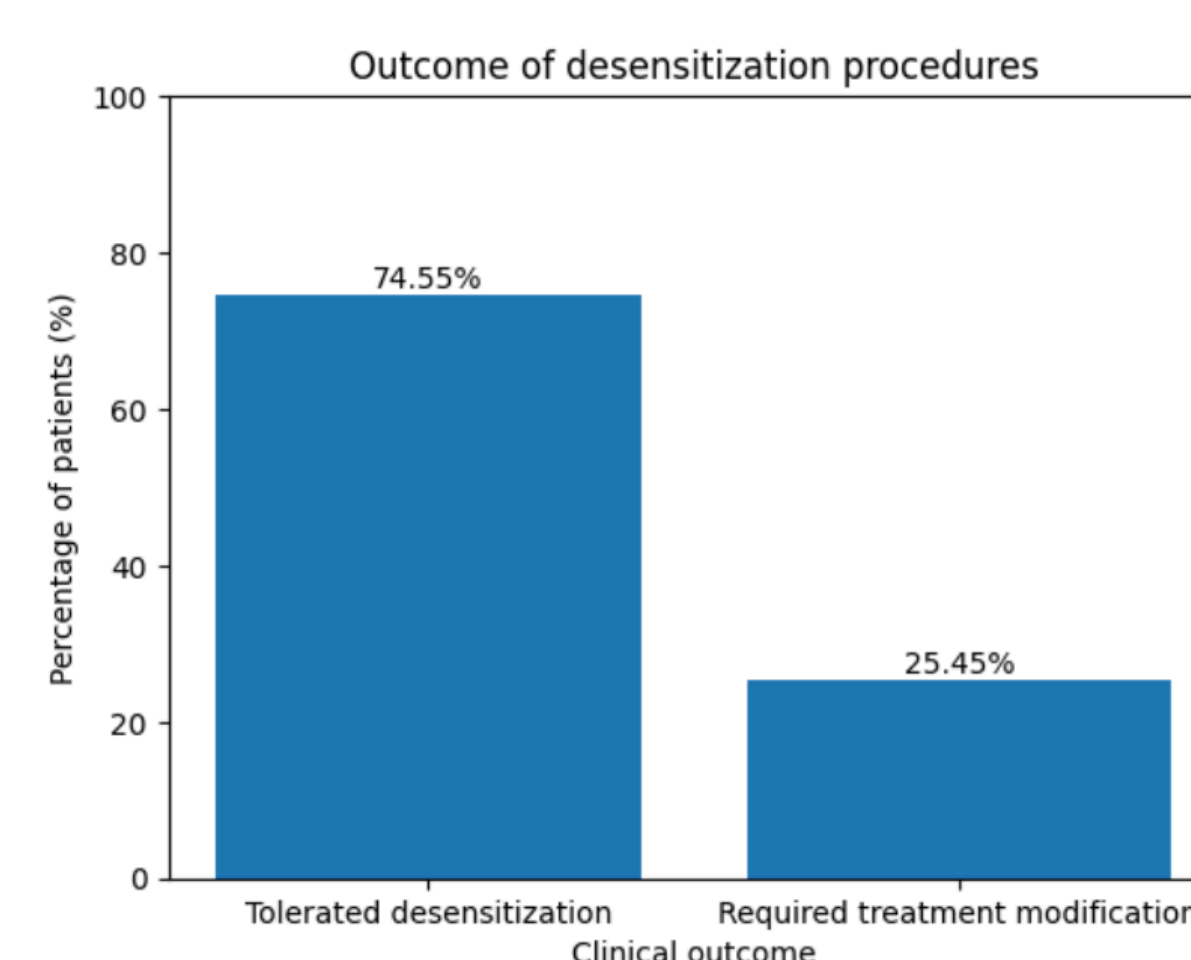
During the study period, 932 bags were prepared for 229 desensitization procedures involving 55 patients and 13 active ingredients. Most protocols required four bags (185 cases, 74.30%), while 64 (25.70%) used a three-bag scheme.

Carboplatin was the most frequent drug (374 bags, 40.13%), followed by paclitaxel (207, 22.21%), oxaliplatin (92, 9.87%), rituximab (83, 8.91%) and atezolizumab (67, 7.19%).

Among the 55 patients, 41 (74.55%) tolerated desensitization and continued their planned therapy for at least one additional cycle, whereas 14 (25.45%) required treatment modification due to intolerance.



## Conclusion and relevance



Desensitization has proven to be a key therapeutic strategy for managing hypersensitivity to oncological drugs. With a favorable outcome in 74.55% of cases during 2023–2024, it allowed most patients to continue the best available therapeutic line, reducing hypersensitivity reactions and supporting treatment continuity. These procedures therefore improve the overall risk–benefit profile and have a meaningful positive impact on treatment outcomes.