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ANALYSIS OF DRUG INTERACTIONS BETWEEN ORAL ANTINEOPLASTIC AGENTS AND CONCURRENT MEDICATIONS

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OBJECTIVES

The development and commercialization of **oral antineoplastic agents** (OAAs) to treat cancer has increased significantly in recent years. However, **drug interactions** is the most frequent drug related problem with regard to these drugs.

Our **objective** was to analyze the potential drug interactions (PDIs) of OAAs with the concurrent medication.

METHODS

- A **cross-sectional observational study** was carried out in outpatients who started treatment with OAAs between December 2015 and May 2019.
- PDIs were analyzed using the **Lexicomp®** and the database **About Herbs®** of the Memorial Sloan Kettering Cancer Center.
- PDIs were classified according to **severity** (major, moderate, minor), **risk** (X, D, C) and **reliability** (excellent, good, fair, poor) ratings and its **mechanism** (pharmacokinetics and pharmacodynamics).

RESULTS

881 patients were included (56.2% male) with a median (range) age of 67.8 years old (22.5-94.4) and **860 PDIs** were identified.

The most frequent **types of tumors** were prostate cancer (16.8%), multiple myeloma (13.6%), hepatocellular carcinoma (13.3%), breast cancer (11.5%), renal carcinoma (n=90; 10.2%) and non-small-cell lung cancer (9.9%).

The **targeted OAAs involved in more PDIs were**: enzalutamide (PDI= 231, PDI/patient= 2.8), thalidomide (PDI= 91, PDI/patient= 2.7), everolimus (PDI= 77, PDI/patient= 1.0), imatinib (PDI= 75, PDI/patient= 1.8) and sorafenib (PDI= 68, PDI/patient= 0.6).

The most frequent **enzymatic systems** involved in those interactions were: CYP3A4 (71.8%), CYP2C19 (10.8%), CYP2D6 (7.6%) and CYP1A2 (2.8%).

Type of potential drug interactions		Total, N (%)
Mechanism of action	*Pharmacokinetic*	**531 (61.7 %)**
	Pharmacodynamic	329 (38.3 %)
Severity	*Major*	**426 (55.3 %)**
	Moderate	331 (42.9 %)
	Minor	14 (1.8 %)
Risk	*C*	**330 (42.8 %)**
	D	286 (37.1 %)
	X	155 (20.1 %)
Reliability	*Good*	245 (28.5 %)
	Fair	611 (71.0 %)
	Poor	**4 (0.5 %)**

CONCLUSIONS

- Half of the patients in treatment with targeted OAAs presented at least one PDIs with the concurrent medicines.
- More than a half of PDI had high risk and severity ratings, and their main mechanism was pharmacokinetic. Therefore, PDIs have an important impact on the management of patients treated with OAA.

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