Prophylactic Dexamethasone Dosing and Incidence of Hypersensitivity Reactions in the Setting of Paclitaxel/Carboplatin Chemotherapy Regimens

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Introduction

According to the NCCN guidelines, patients receiving paclitaxel should be given hypersensitivity reaction prophylaxis to prevent infusion related reactions before, during, and after the appointment. In the setting of paclitaxel regimens that include carboplatin infusions and require anti-emesis prophylaxis, high levels of dexamethasone exposure begin to be a concern due to the premedication required, and an existing drug-drug interaction with aprepitant. This retrospective analysis seeks to determine if a reduction in the dexamethasone protocol dose increases a patient's risk to encounter a hypersensitivity reaction to paclitaxel.

Objectives

Primary Outcome

Development of a hypersensitivity reaction to paclitaxel.

Secondary outcomes

1. Time until hypersensitivity reaction
2. Severity of reaction

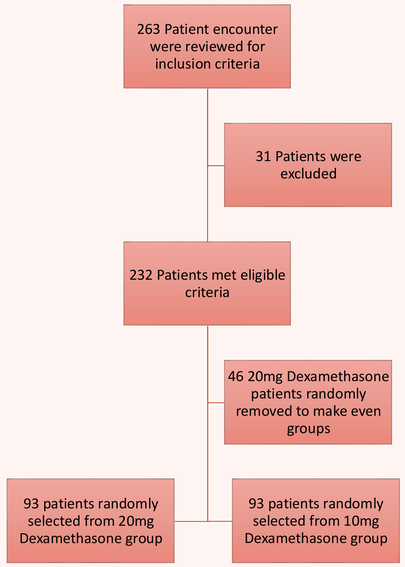
Methods

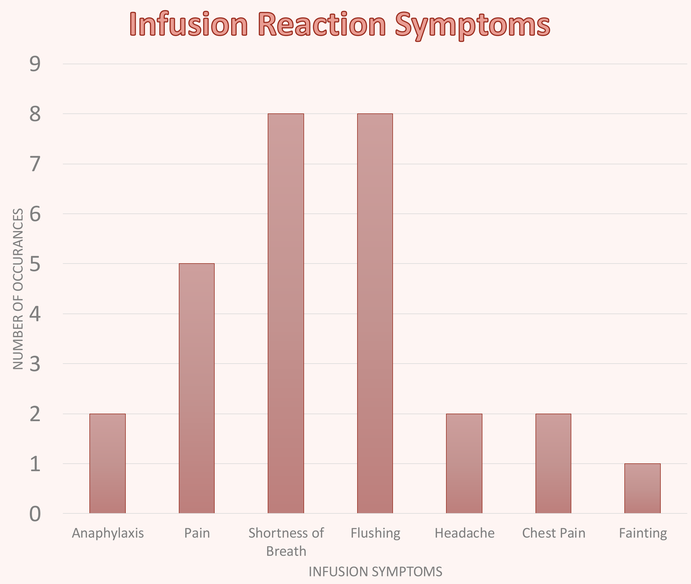
This study is a retrospective, single center project that includes patients who 18 years or older, have a positive diagnosis for any cancer, received a NCCN approved regimen containing a paclitaxel 3-hour infusion carboplatin infusion, and receive dexamethasone as a premedication. Eligible patient charts will be reviewed from a date range of January 1st, 2023- December 31st, 2023. Patients who are 17 year of age or younger, who have a history of hypersensitivity reactions to paclitaxel, or did not receive dexamethasone as a premedication are excluded from the study. Due to standard therapy being 20mg of dexamethasone, few encounters for 10mg of dexamethasone are present in the study. Encounters will be randomly selected to reach two equal groups.

CTCAE 4.03 Criteria

Grade 1	Mild transient reaction; infusion interruption not indicated; intervention not indicted
Grade 2	Therapy or infusion interruption indicated but responds promptly to symptomatic treatment (e.g., antihistamines, NSAIDS, narcotics, IV fluids)
Grade 3	Prolonged (e.g., not rapidly responsive to symptomatic medication and/or brief interruption of infusion); hospitalization indicated for clinical sequelae
Grade 4	Life-threatening consequences; urgent intervention indicated
Grade 5	Death

		All (n=186)	10mg Dexamethasone (n=93)	20mg Dexamethasone (n=93)
Age		65	64	66
Gender (Female%)		91.8	93.5	88.2
Race (%)				
	White	82.8	79.5	86
	Black	12.4	20.5	4.3
	Hispanic	2.7	0	5.4
	N/A	2.1	0	4.3
Hypersensitivity Reaction		9	4	5
Grades				
	I	1	1	0
	II	6	2	4
	III	2	1	1
	IV	0	0	0
	V	0	0	0
Time To Reaction (Min)		9	12	10





Results

A total of 263 encounters were analyzed and 2 equal groups were made. Group 1 received 20mg of dexamethasone, group 2 received 10mg of dexamethasone (n=93). In the 20mg of dexamethasone group, 5 encounters (5.4%) experienced a hypersensitivity reaction to paclitaxel. In the 10mg of dexamethasone group, 4 encounters (4.3%) experienced hypersensitive reactions to paclitaxel.

The most frequent hypersensitivity reaction grade was 2. Average time to onset of hypersensitivity symptoms was for all participants was 9 minutes.

Conclusion

Patients who were pretreated with 10mg of dexamethasone slightly less likely to develop a hypersensitivity reaction to paclitaxel compared to pretreatment with 20mg of dexamethasone (RR=0.79). There was not a difference between the two groups in time to onset of hypersensitivity reaction.

The most common grade of reaction was grade 2. The most common symptom was shortness of breath and flushing (n=8). Only 1 ED hospitalization occurred during this study.

Limitations

Some limitations to this study were differences in prescribing habits for the dose of dexamethasone, poor documentation from staff on symptoms or severity of hypersensitivity reactions, and the absence of men from the study sample

Disclosures

Disclosure of relevant Financial Relationships

Matthew Hickson: Nothing to disclose
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