Modifying thalidomide chemotherapy in the setting of dysphagia

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OBJECTIVE

To describe the successful modification of thalidomide as part of Melphalan, Prednisolone, Thalidomide (MPT) chemotherapy in a patient unable to tolerate oral administration.

CLINICAL FEATURES

A 71 year old female with a past medical history of IHD and systolic heart failure was admitted with refractory Multiple Myeloma.

The patient's previous chemotherapy regimen (Bortezomib, Cyclophosphamide, Dexamethasone) was unsuccessful in achieving a reduction in Lambda LC and paraprotein so a switch to second line chemotherapy with MPT was planned.

On admission she had poor oral intake and a video fluoroscopy identified moderate dysphagia. She required nasogastric tube insertion for feeding and medication administration.

INTERVENTIONS

The MPT chemotherapy was unable to be administered orally so alternative routes were needed. As parenteral thalidomide is not available nasogastric administration was required.

Due to the cytotoxic nature of the medication, opening or crushing the capsules for nasogastric administration is not recommended.[1] To reduce potential exposure to staff and the patient a suspension for administration via nasogastric tube was compounded in the cytotoxic suite.

The treating team suggested a formulation which required complex preparation methods and had excipients which were difficult to source.[2] An alternative formulation[3] was found by the pharmacist which used a commercially available syrup vehicle and suspending agent.

Using this formulation and a modified method, the suspension was prepared in a cytotoxic cabinet. Individual doses of 100mg were provided in oral dispensers for ease of administration and safety.

CASE PROGRESS

The modified MPT chemotherapy regimen was successfully administered with no major complications.

After a few days, the patient was transferred to a rehabilitation ward where she continued to receive the thalidomide via nasogastric tube.

Once the patient's dysphagia resolved and the nasogastric tube was removed, the patient was discharged home on oral thalidomide.

OUTCOMES

Two weeks after chemotherapy was started, both Lambda LC and paraprotein levels were reduced indicating response to treatment. Further cycles of standard MPT chemotherapy were administered orally in the outpatient setting.

CONCLUSION

Thalidomide suspension was successfully compounded and safely administered via nasogastric tube to a patient who could not tolerate oral administration.

Figure1: Thalidomide Suspension 20mg/ml formula and method

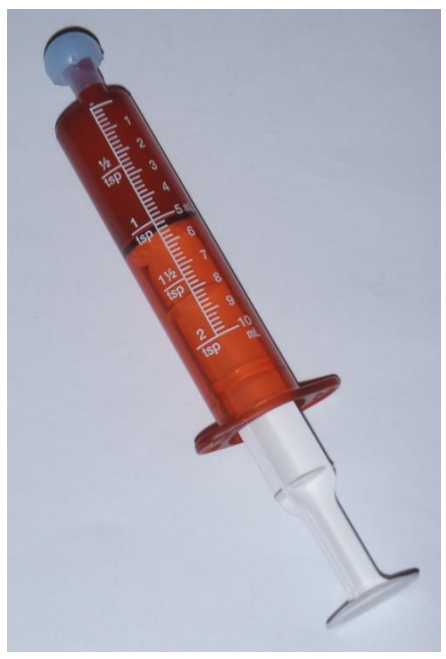
Ingredients	Quantity	Manufacturer	Batch	Expiry	Initials
Thalidomide capsules 100mg	28	Celgene			
Ora-Plus	70 mL	Perrigo			
Ora-Sweet	70 mL	Perrigo			

To be prepared in a cytotoxic cabinet with the appropriate personal protective equipment.

- Measure the Ora-Plus and Ora-Sweet into a 200ml glass amber bottle. Shake to mix.
- Carefully open the thalidomide capsules and empty the contents into the bottle containing the Ora-Plus and Ora-Sweet mixture. Shake to mix.
- Attach an oral dispenser adaptor to the bottle, draw up 5ml aliquots of the suspension into oral dispensers and cap.
- Label with dispensing and ancillary labels.

Ancillary Labels: 1, 6, 16, 21, J, Cytotoxic
Storage: 2 to 8 ^{o}C
Expiry: 28 days

Figure 2: 5ml of Thalidomide 20mg/ml suspension in an oral dispenser



REFERENCES

1. Burridge, Nicolette, (editor.) & Symons, Keli, (editor.) & Society of Hospital Pharmacists of Australia (issuing body.) & SHPA Publications Reference Group (issuing body.) 2015, Australian don't rush to crush handbook : therapeutic options for people unable to swallow solid oral medicines, Second edition, Collingwood, Vic
2. Hopkins AM, Sharley NA, Tang CD. Stability study of a thalidomide suspension. J Pharm Pract Res 2012; 42:115-7.
3. Kraft S, Johnson CE, Tyler RP. Stability of an extemporaneously prepared thalidomide suspension. Am J Health-Syst Pharm 2012; 69: 56-8.

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