Pegylated Liposomal DOXOrubicin 50mg/m^2 -28 days

Please note that the Myocet® product, which contains non-pegylated liposomal DOXOrubicin should not be used when treating patients with this regimen.

INDICATIONS FOR USE:

INDICATION	ICD10	Regimen Code	HSE approved reimbursement status*
Monotherapy for patients with metastatic breast cancer	C50	00205a	N/A
Treatment of advanced ovarian cancer in women who have failed a first-line platinum-based chemotherapy regimen	C56	00205b	N/A
Metastatic soft tissue sarcoma	C49	00205c	N/A
Treatment of recurrent or advanced endometrial cancer	C54	00205d	N/A

* This applies to post 2012 indications

TREATMENT:

The starting dose of the drugs detailed below may be adjusted downward by the prescribing clinician, using their independent medical judgement, to consider each patients individual clinical circumstances.

Treatment is administered once every 4 weeks for typically 6 cycles or may be continued until disease progression or unacceptable toxicity occurs.
Facilities to treat anaphylaxis MUST be present when systemic anti-cancer therapy (SACT) is administered.

Day	Drug	Dose	Route	Diluent & Rate	Cycle
1	Pegylated liposomal DOXOrubicin	50mg/m^2	IV infusion	[a]250mL glucose 5% at rate of 1mg/minute for first cycle (see note)	Repeat every 28 days

[a]For doses ≥ 90mg, use 500mL infusion bag
Do not use with in-line filters
NOTE: If no infusion reaction observed subsequent infusions may be administered over 60 minutes.For patients who experience an infusion reaction, the method of infusion should be modified as follows: 5% of the total dose should be infused slowly over the first 15 minutes. If tolerated without reaction, the infusion rate may then be doubled for the next 15 minutes. If tolerated, the infusion may then be completed over the next hour for a total infusion time of 90 minutes.

Note: Administration volumes and fluids have been standardised to facilitate electronic prescribing system builds.

ELIGIBILITY:

- Indications as above
- Adequate haematologic, liver and cardiac function

Breast cancer, ovarian cancer, endometrial:

- ECOG 0-3

Sarcoma:

- ECOG 0-2

EXCLUSIONS:

- Hypersensitivity to pegylated liposomal DOXOrubicin, peanut, soya or to any of the excipients

CAUTION:

- Pre-existing cardiac myopathy or congestive heart failure

PRESCRIPTIVE AUTHORITY:

The treatment plan must be initiated by a Consultant Medical Oncologist.

TESTS:

Baseline tests:

- FBC, renal and liver profile
- ECG
- MUGA or ECHO (to determine LVEF)

Regular tests:

- FBC, renal and liver profile prior to each cycle
- ECG
- *MUGA or ECHO (to determine LVEF as clinically indicated)
- *See Regimen specific complications for guidelines regarding cardiotoxicity
- Assessment of palmar-plantar erythrodysesthesia syndrome (PPE) as clinically indicated

Disease monitoring:

Disease monitoring should be in line with the patient's treatment plan and any other test/s as directed by the supervising Consultant.

DOSE MODIFICATIONS:

- Any dose modification should be discussed with a Consultant.

Haematological:

Table 1: Dose modification of pegylated liposomal DOXOrubicin in haematological toxicity

ANC ($x10^9$/L)		Platelets ($x10^9$/L)	Dose
1.5 - 1.9	and	≥ 75	**100%**
1 - < 1.5	or	50 - 74	Wait until ANC ≥ 1.5 and platelets ≥ 75; redose with no dose reduction
0.5 - < 1	or	< 50	Wait until ANC ≥ 1.5 and platelets ≥ 75; redose with no dose reduction
< 0.5	or	< 25	Wait until ANC ≥ 1.5 and platelets ≥ 75; decrease dose by 25% or continue full dose with growth factor support.

Renal and Hepatic Impairment:

Table 2: Dose modification of pegylated liposomal DOXOrubicin in renal and hepatic impairment

Renal Impairment	Hepatic Impairment	
No need for dose adjustment expected	**Bilirubin (micromol/L)**	**Dose**
	20 - 50	75% of the original dose
	51 - 86	50% of the original dose
	>86	Not recommended
Haemodialysis: no need for dose adjustment is expected		
Recommendations as per Giraud et al 2023		

Management of adverse events:

Table 3: Dose Modification of pegylated liposomal DOXOrubicin Palmar-Plantar Erythrodysesthesia (PPE) and Stomatitis

Week after prior pegylated liposomal DOXOrubicin dose			
Toxicity Grade At Current Assessment	**Day 1 of new cycle**	**Delayed one week**	**Delayed 2 weeks**
Grade 1	**Redose unless** patient has experienced a previous Grade 3 or 4 skin toxicity or stomatitis, in which case delay 1week	**Redose unless** patient has experienced a previous Grade 3 or 4 skin toxicity or stomatitis, in which case delay 1week	PPE and stomatitis: Decrease dose by 25 %; OR Stomatitis: Consider discontinuation - clinician decision
Grade 2	Delay 1 week	Delay an additional week	PPE and stomatitis: Decrease dose by 25 %; OR Stomatitis: Consider discontinuation - clinician decision
Grade 3	Delay 1week	Delay an additional week	Discontinue
Grade 4	Delay 1week	Delay an additional week	Discontinue

SUPPORTIVE CARE:

EMETOGENIC POTENTIAL:

- As outlined in NCCP Classification Document for Systemic Anti-Cancer Therapy (SACT) Induced Nausea and Vomiting - Available on NCCP website

Pegylated liposomal DOXOrubicin: Low (**Refer to local policy)**

For information:
Within NCIS regimens, antiemetics have been standardised by Medical Oncologists and Haemato-oncologists. Information is available in the following documents:

- NCCP Supportive Care Antiemetic Medicines for Inclusion in NCIS (Medical Oncology) - Available on NCCP website
- NCCP Supportive Care Antiemetic Medicines for Inclusion in NCIS (Haemato-oncology) - Available on NCCP website

PREMEDICATIONS: None usually required

OTHER SUPPORTIVE CARE:
Other strategies to prevent and treat PPE, which may be initiated for 4 to 7 days after treatment with pegylated liposomal DOXOrubicin include keeping hands and feet cool, by exposing them to cool water (soaks, baths, or swimming), avoiding excessive heat/hot water and keeping them unrestricted (no socks, gloves, or shoes that are tight fitting) (**Refer to local policy**).

ADVERSE EFFECTS

- Please refer to the relevant Summary of Product Characteristics (SmPC) for details.

REGIMEN SPECIFIC COMPLICATIONS:

- **Cardiotoxicity**: Frequent ECG monitoring is recommended. Reduction of the QRS complex suggests cardiac toxicity. LVEF monitoring using ECHO or MUGA should be applied during treatment. The evaluation of LVEF is considered to be mandatory before each additional administration of pegylated liposomal DOXOrubicin that exceeds a lifetime cumulative anthracycline dose of 450mg/m^2. Cardiac toxicity also may occur at cumulative anthracycline doses lower than 450mg/m^2 in patients with prior mediastinal irradiation or in those receiving concurrent cyclophosphamide therapy.
- **Acute Infusion Reaction:** Usually seen during the first infusion. For patients who experience an infusion reaction, the method of infusion should be modified as follows: 5% of the total dose should be infused slowly over the first 15 minutes. If tolerated without reaction, the infusion rate may then be doubled for the next 15 minutes. If tolerated, the infusion may then be completed over the next hour for a total infusion time of 90 minutes.

DRUG INTERACTIONS:

- Current SmPC and drug interaction databases should be consulted for more information.

REFERENCES:

1. Alberts DS, et al. Efficacy and safety of liposomal anthracyclines in phase I/II clinical trials. Semin Oncol 2004; 32(Suppl 13):53-90.
2. O'Brien, M. E., N. Wigler, M. Inbar, et al. Reduced cardiotoxicity and comparable efficacy in a phase III trial of pegylated liposomal doxorubicin HCl (CAELYX/Doxil) versus conventional doxorubicin for first-line treatment of metastatic breast cancer. Ann.Oncol. 2004;15(3):440-449
3. Gordon, A. N., J. T. Fleagle, et al. Recurrent epithelial ovarian carcinoma: a randomized phase III study of pegylated liposomal doxorubicin versus topotecan. J.Clin Oncol. 2001; 19(14): 3312-3322.
4. Rose, P. G. Pegylated liposomal doxorubicin: optimizing the dosing schedule in ovarian cancer. Oncologist. 2005; 10(3):205-214.
5. Kim, R. J., G. Peterson, B. Kulp, et al. Skin toxicity associated with pegylated liposomal doxorubicin

(40 mg/m2) in the treatment of gynecologic cancers." Gynecol.Oncol. 2005 97(2):374-378.
6. Gordon, A. N., M. Tonda, S. Sun, et al. Long-term survival advantage for women treated with pegylated liposomal doxorubicin compared with topotecan in a phase 3 randomized study of recurrent and refractory epithelial ovarian cancer. Gynecol Oncol 2004; 95(1):1-8.
7. Judson I, et al. Randomised phase II trial of pegylated liposomal doxorubicin (Caelyx®) versus doxorubicin in the treatment of advanced or metastatic soft tissue sarcoma: a study by the EORTC Soft Tissue and Bone Sarcoma Group. European Journal of Cancer 2001;37(7):870-877
8. Giraud E L, Lijster B D, et al. Dose recommendations for anticancer drugs in patients with renal or hepatic impairment: an update. Available at: https://www.thelancet.com/journals/lanonc/article/PIIS1470-2045(23)00216-4/fulltext
9. NCCP Classification Document for Systemic Anti-Cancer Therapy (SACT) Induced Nausea and Vomiting. V6 2025. Available at: https://www.hse.ie/eng/services/list/5/cancer/profinfo/chemoprotocols/nccp-classification-document-for-systemic-anti-cancer-therapy-sact-induced-nausea-and-vomiting.pdf
10. Pegylated liposomal DOXOrubicin (Caelyx pegylated liposomal®) Summary of product characteristics. Last updated: 04/02/2020. Accessed July 2025. Available at https://www.ema.europa.eu/en/documents/product-information/caelyx-pegylated-liposomal-epar-product-information_en.pdf

Version	Date	Amendment	Approved By
1	10/02/2014		
2	29/07/2014	Treatment dose update	Prof Maccon Keane
3	15/06/2016	Inserted Disease monitoring statement and clarified frequency of regular testing	Prof Maccon Keane
4	20/06/2018	Updated with new NCCP template, updated title	Prof Maccon Keane
5	10/06/2020	Reviewed.	Prof Maccon Keane
6	25/05/2022	New indication added	Dr Mark Doherty
7	28/07/2023	Removed reference to brand name	Prof Maccon Keane
8	23/07/2025	Reviewed. New indication added for endometrial carcinoma. Standardised wording applied. Updated baseline and regular testing. Renal and hepatic impairment updated to Giraud et al, references updated.	Prof Maccon Keane

Comments and feedback welcome at oncologydrugs@cancercontrol.ie.