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Cyclophosphamide treatment monitoring (Oral and IV)

Continuous low dose oral cyclophosphamide monitoring:

Check CBC:

- 1- Weekly for the first month.
- 2- TWO Weekly for the second and third month
- 3- Monthly thereafter.

WBC counts:

- a) If white blood cells (WCC) $<4 \times 10^9 /L$, stop oral cyclophosphamide temporarily and restart with a dose reduced by at least 25 mg when WCC have recovered, thereafter monitor weekly for 4 weeks.
- b) If severe (WCC $<1 \times 10^9 /L$, neutrophil count $<0.5 \times 10^9 /L$) or prolonged leucopenia/neutropenia (WCC $<4 \times 10^9 /L$, neutrophil count $<2 \times 10^9 /L$ for >2 weeks) then stop oral cyclophosphamide and restart cyclophosphamide at 50 mg/day when WCC and neutrophils counts have recovered, increasing to target dose weekly, WBC permitting.
- c) For falling WBC ($<6 \times 10^9 /L$ and a fall of $>2 \times 10^9 /L$ over previous count), reduce dose by 25%.
- d) For severe leucopenia,:
 - Consider G-CSF (note concern over possible pro-vasculitic effect).
 - Review / reconsider fungal prophylaxis
 - Review pneumocystis prophylaxis
 - Renal function should be measured alongside FBC monitoring and adjustments to cyclophosphamide dose should be made accordingly (C).

Pulsed cyclophosphamide monitoring:

Check FBC on day of infusion or previous day. If WBC prior to infusion <4.0 or neutrophil count <2.0 , then postpone infusion until WBC >4.0 and neutrophil count >2.0 while checking the FBC weekly. Reduce dose of infusion by 25%. With any further episodes of leucopenia/neutropenia make equivalent dose reduction.

After the first infusion of cyclophosphamide check FBC between days 7 and 10 and on day of next infusion.

If the leucocyte nadir is <3.0 , or the neutrophil nadir <1.5 , reduce dose of next infusion by:

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o leucocyte nadir 1–2.0 or neutrophil nadir 0.5–1.0 - reduce cyclophosphamide infusion by 40% of previous dose

o leucocyte nadir 2–3.0 or neutrophil nadir 1–1.5 - reduce cyclophosphamide infusion by 20% of previous dose [17] (B).

This applies even if WBC just prior to the next infusion is 4.0 and neutrophil count 2.0. Thereafter check the FBC on the day of the infusion or previous day unless there is an adjustment made to the dose of cyclophosphamide administered or interval period between infusions, in these cases the FBC should be additionally checked at day 10.

Renal function should be measured on the day of infusion or previous day and adjustments be made to cyclophosphamide dose as per table above.

Source: <https://www.nuh.nhs.uk/download.cfm?doc=docm93jjm4n538.pdf&ver=5376> (valid until 2020)