BMT Introduction to Pharmaceutical Care

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Blood and Marrow Transplant Pharmacist
Royal North Shore Hospital
Aims and Objectives

● Aim
  – Provide an overview of the role of the BMT pharmacist

● Objectives
  – Classes of drugs (and terminology)
  – Drug administration
  – Drug calculation
  – Therapeutic drug monitoring
  – Common side effects and interactions
Role of the BMT Pharmacist

- Pharmacists are key members of the multidisciplinary HCT team.
- As medication experts, they are central to medication management and transitions of care.
- They are also trained to provide education and perform policy, quality, and research endeavors.
- Evidence supports the direct and indirect value HCT pharmacists provide.

Classes of Drugs (and Terminology)

- Mobilisation
- Conditioning
- GVHD prophylaxis
- Infection prophylaxis
- Other Supportive Care
Classes of Drugs (and Terminology)

- **Mobilisation** (PBSC Collection) – Auto and Donor
  - GCSF (Granulocyte Colony Stimulating Factor)
  - Filgrastim (Neupogen, Nivestim, Tevagraslim)
  - G-primed or Cyclo-G
  - Healthy Donor or Own
  - Filgrastim dose is always 10microg/kg/day
  - Round to nearest 300microg or 480microg
Mobilisation *(eviq)*

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### Peripheral blood stem cell (PBSC) mobilisation protocol CYCLOPHOSPHamide

**ID: 707 v.4**  
*Endorsed*

#### Treatment schedule

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mesna</td>
<td>3,000 mg/m² *</td>
<td>IV infusion</td>
<td>1</td>
</tr>
<tr>
<td>CYCLOPHOSPHamide</td>
<td>3,000 mg/m² *</td>
<td>IV infusion</td>
<td>1</td>
</tr>
<tr>
<td>Filgrastim</td>
<td>10 micrograms/kg (in divided doses)</td>
<td>Subcut</td>
<td>3 and continue daily until stem cells have been harvested</td>
</tr>
</tbody>
</table>

* Doses of cyclophosphamide range from 2 to 4 g/m². Guidance as to which dose is most appropriate is detailed in the evidence section below. The dose in this protocol was selected by the eviQ BMT Reference Committee. Please ensure that the mesna dose is suitable for the chosen cyclophosphamide dose.
Classes of Drugs (and Terminology)

- **Conditioning – Auto and Allo**
  - Conditions (ie. ablates old cells to “make room”) bone marrow to allow for new stem cells to grow
  - VERY high dose cytotoxic chemotherapy or TBI
  - Single agent of combination
  - Varying degrees of myelotoxicity
  - Differs depending on type of transplant and age of patient eg. Auto vs Allo, Myeloablative vs RIC
## Conditioning (eviq)

### Autologous conditioning protocol BEAM (carmustine etoposide cytarabine melphalan)

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carmustine</td>
<td>300 mg/m²</td>
<td>IV</td>
<td>-6</td>
</tr>
<tr>
<td>Etoposide *</td>
<td>200 mg/m²</td>
<td>IV infusion</td>
<td>-5 to -2 (4 doses)</td>
</tr>
<tr>
<td>Cytarabine (Ara-C)</td>
<td>200 mg/m² TWICE a day</td>
<td>IV infusion</td>
<td>-5 to -2</td>
</tr>
<tr>
<td>Melphalan</td>
<td>140 mg/m²</td>
<td>IV infusion</td>
<td>-1</td>
</tr>
</tbody>
</table>

Doses of individual drugs in BEAM have evolved and variation may occur between institutions. The doses in this protocol were selected by the eviQ BMT Reference Committee.

* Doses in this protocol are expressed as etoposide; however Etopophos (etoposide phosphate) is the preferred formulation.

Note: 1 mg of etoposide = 1.136 mg Etopophos (etoposide phosphate).
**Conditioning (eviq)**

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**Allogeneic reduced intensity conditioning protocol fludarabine and melphalan**

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>Route</th>
<th>Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fludarabine</td>
<td>25 mg/m²</td>
<td>IV infusion</td>
<td>-7 to -3</td>
</tr>
<tr>
<td>Melphalan</td>
<td>140 mg/m²</td>
<td>IV infusion</td>
<td>-2</td>
</tr>
</tbody>
</table>

Alternative dosing regimens have been published using fludarabine 25 to 30 mg/m² for 4 to 5 days in combination with melphalan 140 mg/m² or 180 mg/m².¹ This may vary as per institutional standard practice, including dose reductions in patients over the age of 60 years of age.

**Notes:**
- Alemtuzumab can be added to this protocol, doses of alemtuzumab vary in the literature and the optimal dose has not been established. Please refer to the evidence section for more information.
- Antithymocyte globulins can be added to this protocol. Select link for information regarding antithymocyte globulins formulations and dosages.
Classes of Drugs (and Terminology)

- **GVHD prophylaxis - Allo only**
  - Graft Versus Host Disease
  - Pre/Post Stem Cell infusion
  - Varying degrees based on:
    - **Risk of GVHD vs benefit of GVL vs risk of infection**
# GVHD prophylaxis (eviq – FluMel)

<table>
<thead>
<tr>
<th>Day</th>
<th>Treatment</th>
<th>Dose/Method</th>
<th>Administration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>-7 to -3</td>
<td>Fludarabine</td>
<td>25 mg/m² (IV infusion)</td>
<td>in 100 mL sodium chloride 0.9% over 30 minutes</td>
</tr>
<tr>
<td>-2</td>
<td>Melphalan</td>
<td>140 mg/m² (IV infusion)</td>
<td>in 250 mL sodium chloride 0.9% over 15 to 20 minutes or as per local institution. Infusion to be completed no later than 60 minutes after reconstitution</td>
</tr>
<tr>
<td>-1</td>
<td>ciclosPORIN</td>
<td>1.5 mg/kg (IV infusion)</td>
<td>TWICE a day (12 hours apart) over 2 to 6 hours and continue until oral therapy can be tolerated</td>
</tr>
<tr>
<td>0</td>
<td>Infusion of stem cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Methotrexate</td>
<td>15 mg/m² (IV bolus)</td>
<td>over 3 to 5 minutes (at least 24 hrs after stem cell/marrow infusion)</td>
</tr>
<tr>
<td>3, 6, 11</td>
<td>Methotrexate</td>
<td>10 mg/m² (IV bolus)</td>
<td>over 3 to 5 minutes</td>
</tr>
</tbody>
</table>
# GVHD prophylaxis (eviq - FluMel)

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<tr>
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<th>Administration Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day -7 to -3</td>
<td>Fludarabine</td>
<td>25 mg/m² (IV infusion)</td>
<td>in 100 mL sodium chloride 0.9% over 30 minutes</td>
</tr>
<tr>
<td>Day -2</td>
<td>Melphalan</td>
<td>140 mg/m² (IV infusion)</td>
<td>in 250 mL sodium chloride 0.9% over 15 to 20 minutes (or as per local institution). Infusion to be completed no later than 60 minutes after reconstitution</td>
</tr>
<tr>
<td>Day -1</td>
<td>etopoSOXIN</td>
<td>1.5 mg/kg (IV infusion)</td>
<td>TWICE a day (12 hours apart) over 2 to 3 hours and continue until oral therapy can be tolerated</td>
</tr>
<tr>
<td>Day 0</td>
<td>Infusion of stem cells</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day 1</td>
<td>Methotrexate</td>
<td>15 mg/m² (IV bolus)</td>
<td>over 2 to 5 minutes (at least 24 hrs after stem cell/marrow infusion)</td>
</tr>
<tr>
<td>Day 3, 6, 11</td>
<td>Methotrexate</td>
<td>10 mg/m² (IV bolus)</td>
<td>over 3 to 5 minutes</td>
</tr>
</tbody>
</table>
Classes of Drugs (and Terminology)

- **Infection prophylaxis – Auto and Allo**
  - Infection risk due to
    - Neutropenia
    - Recovery of Immune system
    - Immune suppression
  - Antiviral (HSV, VZV)
  - Anti-PJP
  - Antifungal (choice based on duration of risk)
  - Antibacterial (broad to only encapsulated)
Infection prophylaxis

- **Auto**
  - Valaciclovir 500mg D from D+1 (for 6 months)
  - Fluconazole 200mg D from D+1 (until neutrophil recovery)
  - Bactrim DS 1 BD Mon/Thurs from neutrophil recovery (for 6 months)

- **Allo**
  - Valaciclovir 500mg D from D+1 (for 6 months)
  - Itraconazole (Lozanoc) 200mg BD from D+1 until immune suppression weaned
  - Bactrim DS 1 BD Mon/Thurs only from neutrophil recovery (for 6 months)
Classes of Drugs (and Terminology)

- **Other Supportive Care**
  - Anti-nausea
    - 5HT3 (Palonosetron, Ondansetron, Granisetron)
    - NK1 receptor antagonist (Netupitant, Aprepitant)
    - Steroid – minimal
    - D2 antagonist (Metoclopramide, Domperidone)
    - Others… Cyclizine, Lorazepam, Olanzapine, Levomepromazine, Prochlorperazine, etc.
  - Growth support
    - GCSF (Auto)
  - Pain relief (eg Mucositis)
Other Supportive Care

2016/03 - ‘Management and prevention of Mucositis, Nausea and Vomiting in BMT’
By Monique Tovo

Password is bmt
...

1 download

Julian Lindsay, Pharmacy (and 7 more)
Drug Administration

- Route?
- Rate?
- Administration device/line?
- Order? Premeds?
- Precautions?
  - Resources available
    - EviQ
    - AIDH
    - Pharmacist :)
Drug Administration

CICLOSPORIN

PREPARATION
Dilute before use.

STABILITY
Ampoule: store below 30 °C.\(^1\)
Infusion solution: stable for 24 hours below 25 °C in non-PVC containers.\(^2\) Polyoxyethylated castor oil in the concentrate can leach plasticiser from PVC.\(^1,3\)

ADMINISTRATION
IM injection: Not recommended
SUBCUT injection: Not recommended
IV injection: Not recommended
IV infusion: Dilute each 1 mL in 20–100 mL of sodium chloride 0.9% or glucose 5% to make a concentration of 0.5 to 2.5 mg/mL and infuse over 2 to 6 hours.\(^4\)
May also be given as a continuous infusion.\(^4\)
Use non-PVC containers and giving sets.\(^1,3\)
IV use for infants and children: Dilute to a maximum concentration of 2.5 mg/mL and infuse over 2 to 6 hours. May also be given as a continuous infusion.\(^5,6\)

COMPATIBILITY
Fluids: Glucose 5%, sodium chloride 0.9%\(^1\)
Y-site: Anidulafungin\(^3\), caspofungin\(^3\), cefaroline tosamil\(^7\), cefotiboprol medocani\(^7\), cefotiboprol\(^6\), linezolid\(^3\), micafungin\(^3\)

INCOMPATIBILITY
Fluids: Plasma-Lyte 148\(^9\)
Drugs: Aciclovir\(^2\), magnesium sulfate\(^3\), phenobarbital (phenobarbitone)\(^10\), voriconazole\(^10\)
Drug Administration

Administration guidelines (Print this page and leave in Med Chart)

- Prepared by TPN Pharmacy - Reconstituted using a 0.22 micron filter, therefore NO filter required for administration.
- Needs dedicated line
- DO NOT transfuse blood products concurrently

**Premedications for each infusion of Thymoglobulin** - to be given 30 minutes prior to EACH infusion

a. Paracetamol 1000 mg PO
b. Hydrocortisone 100mg IVI bolus **REPEAT dose of Hydrocortisone HALF WAY through Infusion**
c. Promethazine 12.5mg IVI bolus

**Day -2 Allogeneic Transplant**
- 0.5mg/kg Thymoglobulin in 500ml N/saline over SIX hours

**Day -1 Allogeneic Transplant**
- 2mg/kg Thymoglobulin in 500ml N/saline over FOUR hours

**Day 0 Allogeneic Transplant**
- 2mg/kg Thymoglobulin in 500ml N/saline over FOUR hours

**Stem cell product should be infused without delay** and can then be followed by Thymoglobulin infusion which may then extend beyond midnight into day +1 or given entirely day +1 if necessary.

**Note:** If there is a delay in the administration of stem cells, “Day 0” Thymoglobulin should also be delayed so that it is given WITHIN 18 hours of the stem cell infusion.

**Observations**

- Baseline observations of temperature (T), pulse (P), blood pressure (B/P) and O2 saturation (SPO2)
Drug Calculation

- mg/kg, mg/m² (Protocol)
- Dose adjustments
  - Renal function, Hepatic function (Eviq, UpToDate, Micromedex)
  - Obesity?
**Dosing: Renal Impairment (Adult)**  
*Note:* Renally adjusted dose recommendations are based on every 12 hours and a maintenance dose of 5 mg/kg/dose every 24 hours.

**IV (Induction):**
- $\text{CrCl} \geq 70 \text{ mL/minute}$: No dosage adjustment necessary.
- $\text{CrCl} 50$ to $69 \text{ mL/minute}$: Administer $2.5 \text{ mg/kg/dose}$ every 12 hours
- $\text{CrCl} 25$ to $49 \text{ mL/minute}$: Administer $2.5 \text{ mg/kg/dose}$ every 24 hours
- $\text{CrCl} 10$ to $24 \text{ mL/minute}$: Administer $1.25 \text{ mg/kg/dose}$ every 24 hours
- $\text{CrCl} <10 \text{ mL/minute}$: Administer $1.25 \text{ mg/kg/dose}$ 3 times/week following hemodialysis.

**IV (Maintenance):**
- $\text{CrCl} \geq 70 \text{ mL/minute}$: No dosage adjustment necessary.
- $\text{CrCl} 50$ to $69 \text{ mL/minute}$: Administer $2.5 \text{ mg/kg/dose}$ every 24 hours
- $\text{CrCl} 25$ to $49 \text{ mL/minute}$: Administer $1.25 \text{ mg/kg/dose}$ every 24 hours
- $\text{CrCl} 10$ to $24 \text{ mL/minute}$: Administer $0.625 \text{ mg/kg/dose}$ every 24 hours
- $\text{CrCl} <10 \text{ mL/minute}$: Administer $0.625 \text{ mg/kg/dose}$ 3 times/week following hemodialysis.

Intermittent hemodialysis (IHD) (administer after hemodialysis on dialysis days). Dialyzable (50%). CMV every 48 to 72 hours. Maintenance: $0.625 \text{ mg/kg every 48 to 72 hours}$. **Note:** Dosing dependent on the complete IHD sessions (Heinitz 2009).

Peritoneal dialysis (PD): Dose as for $\text{CrCl} <10 \text{ mL/minute}$ (Aronoff 2007).

Continuous renal replacement therapy (CRRT) (Heinitz 2009, Trotman 2005): Drug clearance is highly d...
# Drug Calculation

## Dosing Recommendations for HCT Conditioning Agents in the Obese Individual

<table>
<thead>
<tr>
<th>Agent</th>
<th>Suggested Dosing</th>
<th>Additional Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alemtuzumab</td>
<td>Flat dosing in adults based upon regimen selected</td>
<td>Addition of this agent to conditioning regimens continues to evolve and there are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>currently no data on dose adjustments for obese individuals. PK monitoring has reduced</td>
</tr>
<tr>
<td></td>
<td></td>
<td>50% from an occurrence rate of approximately 20% to less than 5% [38].</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AUC/Cₚ₅₀ targeting varies by regimen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For BuCy regimen the MTD is 16 mg/kg PO equivalent over 4 d for adults. For BuBuA</td>
</tr>
<tr>
<td></td>
<td></td>
<td>lumentumab MTD based on daily AUC have been determined. Dosing with other combinations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of agents is still being determined.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Current literature consensus for dosing carboplatin based on AUC for HCT regimens</td>
</tr>
<tr>
<td></td>
<td></td>
<td>or adjustments on dosing during HCT for obese individuals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pulmonary toxicity &gt;5% at 600 mg/m² with multiple agent regimen. MTD of 1200 mg/</td>
</tr>
<tr>
<td></td>
<td></td>
<td>m² as single agent with 9.5% pulmonary toxicity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Addition of this agent to conditioning regimens continues to evolve and there are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>currently no data on dose adjustments for obese individuals.</td>
</tr>
<tr>
<td>Buserelin</td>
<td>Dose adults on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Carbboplatin</td>
<td>Dose adults on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Carmustine</td>
<td>Dose adults on BSA based on TBW unless &gt;1.20 x IBW then dose on BSA based on</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ABW25.</td>
</tr>
<tr>
<td>Clofarabine</td>
<td>Dose adults and children on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Cyclophosphamide</td>
<td>• Dose on the lesser of TBW or IBW for Cy200.</td>
<td>Cytarabine dosing generally lower than dose used in leukemia consolidation regimens.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DLT of mucositis.</td>
</tr>
<tr>
<td></td>
<td>• For Cy200 dosing can be either TBW or TBW until &gt;1.20 x IBW then dose based</td>
<td>Risk factors and effects of chemotherapy on post treatment leucoencephalopathy still</td>
</tr>
<tr>
<td></td>
<td></td>
<td>on ABW25. The former method is preferred for adults and the latter is preferred in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>being studied for conditioning regimen doses above 125 mg/m².</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DLT of mucositis. Adjustments for age and renal function are still not standardized.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Addition of this agent to conditioning regimens continues to evolve and there are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>currently no data on dose adjustments for obese individuals.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Multi-agent MTD is 500-750 mg/m², single-agent MTD is 900 mg/m² [38].</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Addition of this agent to conditioning regimens continues to evolve and there are</td>
</tr>
<tr>
<td></td>
<td></td>
<td>currently no data on dose adjustments for obese individuals.</td>
</tr>
<tr>
<td>Etoposide</td>
<td>Dose adults on ABW25 for mg/kg dosing and BSA based on TBW for BSA based</td>
<td></td>
</tr>
<tr>
<td>Fludarabine</td>
<td>Dose adults on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Melphalan</td>
<td>Dose adults on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Pentostatin</td>
<td>Dose adults on BSA based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Thiotepa</td>
<td>Dose adults on BSA based on TBW unless &gt;1.20 x IBW then dose on BSA based on</td>
<td></td>
</tr>
<tr>
<td>Antithymocyte globulin - equine</td>
<td>Dose on mg/kg/d based on TBW.</td>
<td></td>
</tr>
<tr>
<td>Antithymocyte globulin - rabbit</td>
<td>Dose on mg/kg based on TBW.</td>
<td></td>
</tr>
</tbody>
</table>

ABW25 indicates IBW = .25(TBW-IBW); ABW40, IBW = .4(TBW-IBW); AUC, area under the curve; Bu, Buserelin; BMI, body mass index; BSA, body surface area; Cₚ₅₀, concentration at steady state; Cy, cyclophosphamide; Cy200, cyclophosphamide 200 mg/kg; DLT, dose-limiting toxicity; Flu, fludarabine; MTD, maximum tolerated dose; PK, pharmacokinetics; PO, oral; SOS, sinusoidal obstruction syndrome; TBW, total body weight; VOD, veno-occlusive disease.

Therapeutic Drug Monitoring (TDM)

- Narrow therapeutic index
  - Immune Suppression (GVHD vs GVL vs Toxicity)
    - Ciclosporin/Tacrolimus
    - Mycophenolate
  - Some antifungals (Vori – Effectiveness vs Toxicity)
  - Busulfan

- Minimal Inhibitory Concentration
  - Posaconazole
  - Itraconazole*
Therapeutic Drug Monitoring (TDM)

- Trough/AUC
  - Time level taken?
  - Line or peripheral?
Common Side Effects and Interactions

- **Effect**
  - Immune suppression
  - GVHD

- **Side Effects**
  - Nausea
  - Mucositis
  - HSOS/VOD
Common Side Effects and Interactions

- Interactions
  - CYP3A4 substrates (some)
    - Ciclosporin/Tacrolimus
    - Cyclophosphamide (metabolites)
    - Quetiapine
    - Itraconazole
  - CYP3A4 inhibitors
    - Azoles (Posa/Itra/Vori/Flu)
    - Ciclosporin
Common Side Effects and Interactions

- Interaction management
  - TDM?
  - Withholding
  - Substituting
  - Modifying
  - Resources – EviQ, Micromedex, UpToDate
Summary – An Allogeneic Protocol for a RIC Sib HSCT

18/05/18 (FRI) Day – 6
Start Ondansetron BD + Maxalon TDS
Fludarabine 40mg/m² po
Start Ursofalk 500mg BD po

19/05/18 (SAT) Day -5
Fludarabine 40mg/m² po

20/05/18 (SUN) Day -4
Fludarabine 40mg/m² po

21/05/18 (MON) Day -3
Fludarabine 40mg/m² po

22/05/18 (TUE) Day -2
Fludarabine 40mg/m² po (at home)
Commence hydration 1L N/S 2/24 pre & post Melphalan
Stop BD Ondansetron, Akynzyeo IV once only
+ Dex 8mg IV for 3/7. Maxalon 10mg po TDS

Melphalan 140mg/m² IVI over 15 mins.

23/05/18 (WED) Day -1
Commence Cyclosporin 1.5mg/kg BD IVI

24/05/18 (THU) Day 0
DONOR PERIPHERAL BLOOD STEM CELLS
Start Palonosetron 0.25mg IV- rpt every 48/24

25/05/18 (FRI) Day +1
Methotrexate 5mg/m² Day +1, Day+3, +6 ,+11
(Administer > 24/24 post HPC infusion)
Give Folinic Acid 15 mg IVI 24/24 after each dose of MTX
Start Valtrex 500mg po dly and Itraconazole 200mg BD

14/06/18 (THU) Day +21
Commence Bactrim DS BD twice weekly
Summary

18/05/18 (FRI) Day – 6  
Start Ondansetron BD + Maxalon TDS

**Fludarabine 40mg/m² po**
Start Ursofalk 500mg BD po

19/05/18 (SAT) Day -5  
**Fludarabine 40mg/m² po**

20/05/18 (SUN) Day -4  
**Fludarabine 40mg/m² po**

21/05/18 (MON) Day -3  
**Fludarabine 40mg/m² po**

22/05/18 (TUE) Day -2  
**Fludarabine 40mg/m² po** (at home)
Commence hydration 1L N/S 2/24 pre & post Melphalan
Stop BD Ondansetron, Akynzyeo IV once only
+ Dex 8mg IV for 3/7. Maxalon 10mg po TDS

Melphalan **140mg/m² IVI** over 15 mins.

23/05/18 (WED) Day -1  
Commence Cyclosporin 1.5mg/kg BD IVI

24/05/18 (THU) Day 0  
**DONOR PERIPHERAL BLOOD STEM CELLS**
Start Palonosetron 0.25mg IV- rpt every 48/24

25/05/18 (FRI) Day +1  
**Methotrexate 5mg/m² Day +1, Day+3, +6 ,+11**
(Administer > 24/24 post HPC infusion)
Give Folinic Acid 15 mg IVI 24/24 after each dose of MTX
Start Valtrex 500mg po dly and Itraconazole 200mg BD

14/06/18 (THU) Day +21  
Commence **Bactrim** DS BD twice weekly

(from)  
Mobilisation
Summary

18/05/18 (FRI) Day – 6 Start Ondansetron BD + Maxalon TDS
   Fludarabine 40mg/m² po
   Start Ursofalk 500mg BD po

19/05/18 (SAT) Day -5 Fludarabine 40mg/m² po
20/05/18 (SUN) Day -4 Fludarabine 40mg/m² po
21/05/18 (MON) Day -3 Fludarabine 40mg/m² po
22/05/18 (TUE) Day -2 Fludarabine 40mg/m² po
   Commence hydration 1L N/S 2/24 pre & post Melphalan
   Stop BD Ondansetron, Akynzyeo IV once only
   + Dex 8mg IV for 3/7. Maxalon 10mg po TDS
   Melphalan 140mg/m² IVI over 15 mins.

23/05/18 (WED) Day -1 Commence Cyclosporin 1.5mg/kg BD IVI
24/05/18 (THU) Day 0 DONOR PERIPHERAL BLOOD STEM CELLS
   Start Palonosetron 0.25mg IV- rpt every 48/24
25/05/18 (FRI) Day +1 Methotrexate 5mg/m² Day +1, Day+3, +6, +11
   (Administer > 24/24 post HPC infusion)
   Give Folinic Acid 15 mg IVI 24/24 after each dose of MTX
   Start Valtrex 500mg po dly and Itraconazole 200mg BD
14/06/18 (THU) Day +21 Commence Bactrim DS BD twice weekly

NSW GOVERNMENT
Health
Northern Sydney
Local Health District
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**GVHD Prophylaxis**
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**Infection Prophylaxis**
Summary

18/05/18 (FRI) Day – 6
Start Ondansetron BD + Maxalon TDS
Fludarabine 40mg/m² po
Start Ursofalk 500mg BD po

19/05/18 (SAT) Day -5
Fludarabine 40mg/m² po

20/05/18 (SUN) Day -4
Fludarabine 40mg/m² po

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Supportive Care

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**TDM/Interactions**
Questions??
Thank you!