

## IP CAGT ALLOGENEIC SCT IV BU-CY-CAM

Types: ONCOLOGY TREATMENT

Synonyms: BU, CY, CAM, BUSULFAN, CYTOXAN, CYCLOPHOSPHAMIDE, CAMPATH, ALEMTUZUMAB, ALMETUZUMAB, BMT, CAGT, ALLOGENEIC, SCT

Transplant	Repeat 1 time	Cycle length: 91 days
<b>Day -8 through -1</b> Perform every 1 day x1		
Labs		
<input checked="" type="checkbox"/>	<b>ECG 12-LEAD</b> Interval: Daily Comments:	Occurrences: -- Starting Day -3. Must be reviewed by MD daily prior to cyclophosphamide doses.
<input checked="" type="checkbox"/>	<b>URINALYSIS, AUTOMATED WITH MICROSCOPY</b> Interval: Daily Comments:	Occurrences: -- Day -3.
<input checked="" type="checkbox"/>	<b>PHENYTOIN LEVEL</b> Interval: Daily Comments:	Occurrences: -- Daily through Day -2
<input checked="" type="checkbox"/>	<b>PHENYTOIN LEVEL</b> Interval: Daily Comments:	Occurrences: -- Daily through Day -2
<input type="checkbox"/>	<b>FREE PHENYTOIN LEVEL</b> Interval: Daily Comments:	Occurrences: -- Daily through Day -2
<input type="checkbox"/>	<b>FREE PHENYTOIN LEVEL</b> Interval: Daily Comments:	Occurrences: -- Daily through Day -2
Line Flush		
	<b>sodium chloride 0.9 % flush 20 mL</b> Dose: 20 mL Start: S	Route: intravenous PRN
Additional Orders		
	<b>ONC NURSING COMMUNICATION 49</b> Interval: Until discontinued Comments:	Occurrences: -- Do NOT administer Acetaminophen/Azoles for 48 hours after last busulfan dose.
Pre-Medications		
	<b>ondansetron (ZOFRAN) 16 mg, dexamethasone (DECADRON) 12 mg in sodium chloride 0.9% 50 mL IVPB</b> Dose: -- Start: S+1	Route: intravenous every 24 hours over 15 Minutes

Instructions:

Administer 30 minutes prior to treatment on Day -7, -6, -5, -4, -3, -2, -1.

Ingredients:	Name	Type	Dose	Selected	Adds Vol.
	ONDANSETRON HCL (PF) 4 MG/2 ML INJECTION SOLUTION	Medications	16 mg	Yes	No
	DEXAMETHASONE 4 MG/ML INJECTION SOLUTION	Medications	12 mg	Yes	No
	SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base	50 mL	Always	Yes
	DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base		No	Yes

**aprepitant (CINVANTI) 130 mg in dextrose (NON-PVC) 5% 130 mL IVPB**

Dose: 130 mg      Route: intravenous      once over 30 Minutes for 1 dose  
Start: S+1

Ingredients:	Name	Type	Dose	Selected	Adds Vol.
	APREPITANT 7.2 MG/ML INTRAVENOUS EMULSION	Medications	130 mg	Main Ingredient	Yes
	DEXTROSE 5 % IN WATER (D5W) IV SOLP (EXCEL; NON-PVC)	Base	130 mL	Yes	Yes
	SODIUM CHLORIDE 0.9 % IV SOLP (EXCEL;NON-PVC)	Base	130 mL	No	Yes

Antiemetics

**promethazine (PHENERGAN) injection 25 mg**

Dose: 25 mg      Route: intravenous      every 4 hours PRN  
Start: S

Supportive Care

**acyclovir (ZOVIRAX) 5 mg/kg (Ideal)**

Dose: 5 mg/kg      Route: intravenous      every 8 hours  
Start: S

**levoFLOXacin (LEVAQUIN) tablet 500 mg**

Dose: 500 mg      Route: oral      daily at 0600 (time critical)  
Start: S

**fluconazole (DIFLUCAN) tablet 200 mg**

Dose: 200 mg      Route: oral      daily  
Start: S+8  
Instructions:  
Start Day 0

Hydration

**sodium chloride 0.9 % infusion**

Dose: 125 mL/hr      Route: intravenous      continuous  
Start: S+5

Chemotherapy

**ONC NURSING COMMUNICATION 57**

Interval: Until discontinued  
Comments:

Occurrences: --

During IV Busulfan:

- INFUSE in the WHITE lumen on the TRIPLE lumen catheter
- LABEL the White lumen: Busulfan
- Prime tubing and filter with Normal Saline only
- Do NOT give any Acetaminophen (Tylenol) during Busulfan doses and for 48 hours following the last dose of Busulfan
- Record START and STOP time of EVERY Busulfan dose
- FLUSH tubing and filter with 20cc Normal Saline after each dose

**busulfan (BUSULFEX) in sodium chloride 0.9%  
chemo IVPB**

Dose: --  
Start: S+1 8:00 AM  
Instructions:  
Day -7, -6, -5, -4.

Route: intravenous every 6 hours over 2 Hours for 16 doses

**Ingredients:**

Name	Type	Dose	Selected	Adds Vol.
BUSULFAN 60 MG/10 ML INTRAVENOUS SOLUTION	Medications		Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base		Yes	Yes

**ONC NURSING COMMUNICATION 17**

Interval: Until discontinued  
Comments:

Occurrences: --

- Monitor VS (temperature, pulse, respirations, and blood pressure) every 15 minutes during Alemtuzumab infusion and for 1 hour following completion
- Continuous oxygen saturation monitoring during Alemtuzumab infusion and for 1 hour following completion. Keep oxygen at bedside through Day 0
- STOP INFUSION and CONTACT MD if any of the following occur: shortness of breath, wheezing, chills, severe myalgia, hypotension, rash, or chest pain

**alemtuzumab (CAMPATH) 10 mg in sodium chloride 0.9% 100 mL IVPB**

Dose: 10 mg  
Start: S+2  
Instructions:  
Day -6, -5, -4.

Route: intravenous every 24 hours over 2 Hours for 3 doses

**Ingredients:**

Name	Type	Dose	Selected	Adds Vol.
ALEMTUZUMAB 30 MG/ML INTRAVENOUS SOLUTION	Medications	10 mg	Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base	100 mL	Yes	Yes
DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base	100 mL	No	Yes

**ONC NURSING COMMUNICATION 7**

Interval: Until discontinued

Occurrences: --

Comments: During CYCLOPHOSPHAMIDE:  
 -12 lead EKG must be ordered and reviewed by physician prior to each dose.  
 -Starting 4 hours PRIOR to cyclophosphamide, change IVF to Normal Saline at 125 mL/hr and continue for 24 hours after last dose of cyclophosphamide completes. (MAX total volume infusion rate during chemotherapy = 350 mL/hr).  
 -Instruct patient to void every 1-2 hours DAILY x 3 days.

**mesna (MESNEX) 20 mg/kg in sodium chloride 0.9% 100 mL chemo IVPB**

Dose: 20 mg/kg Route: intravenous once over 30 Minutes for 1 dose

Start: S+5

Instructions:

Day -3.

**Ingredients:**

Name	Type	Dose	Selected	Adds Vol.
MESNA 100 MG/ML INTRAVENOUS SOLUTION	Medications	20 mg/kg	Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base	100 mL	Yes	Yes
DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base	100 mL	No	Yes

**cyclophosphamide (CYTOXAN) 60 mg/kg in dextrose 5% 500 mL chemo IVPB**

Dose: 60 mg/kg Route: intravenous every 24 hours over 2 Hours for 2 doses

Start: S+5

Instructions:

Day -3, -2.

**Ingredients:**

Name	Type	Dose	Selected	Adds Vol.
CYCLOPHOSPHAMIDE 1 GRAM INTRAVENOUS SOLUTION	Medications	60 mg/kg	Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	QS Base	500 mL	No	Yes
DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	QS Base	500 mL	Yes	Yes

**mesna (MESNEX) 10 mg/kg in sodium chloride 0.9% 100 mL chemo IVPB**

Dose: 10 mg/kg Route: intravenous every 4 hours over 30 Minutes for 12 doses

Start: S+5

Instructions:

Day -3, -2.

Start 4 hours after loading dose of Mesna

**Ingredients:**

Name	Type	Dose	Selected	Adds Vol.
MESNA 100 MG/ML INTRAVENOUS SOLUTION	Medications	10 mg/kg	Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base	100 mL	Yes	Yes

SOLUTION  
DEXTROSE 5 % IN Base 100 mL No Yes  
WATER (D5W)  
INTRAVENOUS  
SOLUTION

Additional Orders

**furosemide (LASIX) injection 20 mg**

Dose: 20 mg Route: intravenous every 24 hours for 2 doses

Start: S+5

Instructions:

-Give at completion of each dose of cyclophosphamide infusion on Day -3 and Day -2.

**furosemide (LASIX) injection 20 mg**

Dose: 20 mg Route: intravenous every 24 hours for 2 doses

Start: S+5

Instructions:

-Give 6 hours AFTER completion of each dose of cyclophosphamide infusion on Day -3 and Day -2.

**diphenhydramine (BENADRYL) injection 25 mg**

Dose: 25 mg Route: intravenous every 24 hours

Start: S+2

Instructions:

PREMED for ALEMTUZUMAB

**hydrocortisone sodium succinate (Solu-CORTEF) injection 100 mg**

Dose: 100 mg Route: intravenous every 24 hours

Start: S+2

Instructions:

PREMED for ALEMTUZUMAB

**meperidine (DEMEROL) 25 mg/mL injection 12.5 mg**

Dose: 12.5 mg Route: intravenous every 15 min PRN for 3 doses

Start: S+2

Line Flush

**sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL Route: intravenous PRN

Pharmacokinetic Instructions

**ONC NURSING COMMUNICATION 18**

Interval: Until Occurrences: --

discontinued

Comments:

1. Infuse Busulfan through the WHITE lumen of the TRIPLE lumen Catheter.
2. LABEL the White lumen: Busulfan.
3. NO other fluids are to be infusing during the Busulfan infusion or the Pharmacokinetics period (Doses #1 and #9).
4. IVF may resume AFTER the last PK is drawn for doses #1 and #9.
5. Busulfan infusion must be complete including flush. When infusion is finished, Disconnect & REMOVE Busulfan bag/tubing PRIOR to starting blood draws. (Does not matter if the post level is drawn 5 min after the infusion ends).
6. USE the same CLOCK / WATCH to document start and stop times, AND all blood draw times.
7. ALL blood samples for Pharmacokinetics to be drawn from the RED lumen of the triple lumen CVC.
8. FLUSH the RED lumen with 30 mL saline flush PRIOR to EVERY blood draw EXCEPT immediately after end of infusion.

9. Use a green top, heparinized tube for all PK samples.
10. After sample is collected, label and place in a plastic biohazard lab bag (NO pre-labeling of tubes).
11. Put sample on wet ice and place in the medication room refrigerator or in the medication room in a closed basin for pick up / transport to TCH lab.
12. DO NOT KEEP MULTIPLE SAMPLES at bedside.

#### Seizure Prophylaxis

##### **phenytoin (DILANTIN) ER capsule 2.5 mg/kg**

Dose: 2.5 mg/kg      Route: oral      2 times daily

Start: S

Instructions:

Hold enteral nutrition at least 1 hour before and 2 hours after dose. Monitor drug levels.

#### VOD Prophylaxis

##### **ursodiol (ACTIGALL) capsule 300 mg**

Dose: 300 mg      Route: oral      3 times daily

Start: S+1

#### Acute Graft Versus Host Prophylaxis

##### **tacrolimus (PROGRAF) 0.02 mg/kg in sodium chloride (NON-PVC) 0.9 % 250 mL infusion**

Dose: 0.02 mg/kg      Route: intravenous      every 24 hours over 24 Hours

Start: S+6 4:00 PM

Instructions:

Start Day -2.

##### **Ingredients:**

<b>Name</b>	<b>Type</b>	<b>Dose</b>	<b>Selected</b>	<b>Adds Vol.</b>
TACROLIMUS 5 MG/ML INTRAVENOUS SOLUTION	Medications	0.02 mg/kg	Main Ingredient	No
SODIUM CHLORIDE 0.9 % IV SOLP (EXCEL;NON-PVC)	Base	250 mL	Yes	Yes
DEXTROSE 5 % IN WATER (D5W) IV SOLP (EXCEL; NON-PVC)	Base	250 mL	No	Yes

#### Day of Rest

##### **ONC NURSING COMMUNICATION 48**

Interval: Until discontinued      Occurrences: --

Comments:      Day -1.

#### Day 0

Perform every 1 day x1

#### Labs

##### **URINALYSIS, AUTOMATED WITH MICROSCOPY**

Interval: Once      Occurrences: --

Comments:      Day 0.

#### Line Flush

##### **sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL      Route: intravenous      PRN

Start: S

#### Antiemetics

##### **ondansetron (ZOFRAN) 16 mg in sodium chloride 0.9 % 50 mL IVPB**

Dose: 16 mg                      Route: intravenous                      once over 15 Minutes for 1 dose

Start: S

**Ingredients:**

**Name**

**Type**

**Dose**

**Selected**  
Main  
Ingredient

**Adds Vol.**  
No

ONDANSETRON  
HCL (PF) 4 MG/2  
ML INJECTION  
SOLUTION

Medications

16 mg

DEXTROSE 5 % IN  
WATER (D5W)  
INTRAVENOUS  
SOLUTION  
SODIUM  
CHLORIDE 0.9 %  
INTRAVENOUS  
SOLUTION

Base

50 mL

No

Yes

Base

50 mL

Yes

Yes

Pre-Medications

**acetaminophen (TYLENOL) tablet 650 mg**

Dose: 650 mg

Route: oral

once for 1 dose

Start: S

Instructions:

Premed for TRANSPLANT

**diphenhydramine (BENADRYL) injection 25 mg**

Dose: 25 mg

Route: intravenous

once for 1 dose

Start: S

Instructions:

Premed for TRANSPLANT

**hydrocortisone sodium succinate (Solu-CORTEF) injection 100 mg**

Dose: 100 mg

Route: intravenous

once for 1 dose

Instructions:

Premed for TRANSPLANT

Transplant Orders

**ONC NURSING COMMUNICATION 55**

Interval: Once

Occurrences: --

Comments:

-Oxygen at bedside during transplantation

-Anaphylaxis precautions at bedside during transplant:

**meperidine (DEMEROL) injection 12.5 mg**

Dose: 12.5 mg

Route: intravenous

every 15 min PRN for 3 doses

Start: S

Instructions:

Administer every 15 minutes x 3 doses PRN  
for each episode of rigors (if rigors persist, call  
MD).

**epINEPHrine (ADRENALIN) 1 mg/1 mL injection 0.3 mg**

Dose: 0.3 mg

Route: subcutaneous

PRN

Start: S

End: S+1

**diphenhydramine (BENADRYL) injection 25 mg**

Dose: 25 mg

Route: intravenous

PRN

Start: S

End: S+1

**hydrocortisone sodium succinate (Solu-CORTEF) injection 100 mg**

Dose: 100 mg

Route: intravenous

PRN

Line Flush

**sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL                      Route: intravenous                      PRN  
Start: S

Antiemetics

**ondansetron ODT (ZOFTRAN-ODT)  
disintegrating tablet 8 mg**

Dose: 8 mg                      Route: oral                      every 8 hours PRN  
Start: S+1  
Instructions:  
Start Day +2

Post-Transplant Orders

**ONC NURSING COMMUNICATION 56**

Interval: Once                      Occurrences: --  
Comments:                      -Oxygen at bedside 24 hours after transplantation  
   -Anaphylaxis precautions at bedside 24 hours after transplant:

**meperidine (DEMEROL) injection 12.5 mg**

Dose: 12.5 mg                      Route: intravenous                      every 15 min PRN for 3 doses  
Start: S  
Instructions:  
Administer every 15 minutes x 3 doses PRN  
for each episode of rigors (if rigors persist, call  
MD).

**epINEPHrine (ADRENALIN) 1 mg/1 mL injection  
0.3 mg**

Dose: 0.3 mg                      Route: subcutaneous                      PRN  
Start: S                      End: S+1

**diphenhydrAMINE (BENADRYL) injection 25  
mg**

Dose: 25 mg                      Route: intravenous                      PRN  
Start: S                      End: S+1

**hydrocortisone sodium succinate  
(Solu-CORTEF) injection 100 mg**

Dose: 100 mg                      Route: intravenous                      PRN