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OP CAGT CYCLOPHOSPHAMIDE / FLUDARABINE/NIVOLUMAB LYMPHODEPLETION – HESTIA

Types: ONCOLOGY TREATMENT

Synonyms: CAGT, CYCLOPHOSPHAMIDE, CYTOXAN, MESNA, FLUDARABINE, FLUDARA, MESNEX, FLU, NIVOLUMAB

Cycle 1	Repeat 1 time	Cycle length: 55 days	
Day -4, Cycle 1			Perform every 1 day x1
Appointment Requests			
	INFUSION APPOINTMENT REQUEST		
	Interval: --	Occurrences: --	
Line Flush			
	sodium chloride 0.9 % flush 20 mL		
	Dose: 20 mL	Route: intravenous	PRN
	Start: S		
Nursing Orders			
	sodium chloride 0.9 % infusion 250 mL		
	Dose: 250 mL	Route: intravenous	once @ 30 mL/hr for 1 dose
	Start: S		
	Instructions:		
	To keep vein open.		
Hydration			
	sodium chloride 0.9 % infusion		
	Dose: 150 mL/hr	Route: intravenous	once over 6 Hours for 1 dose
	Instructions:		
	Start 1 hour prior to chemotherapy.		
Pre-Medications			
	ondansetron (ZOFTRAN) tablet 16 mg		
	Dose: 16 mg	Route: oral	once for 1 dose Offset: 30 Minutes
	Instructions:		
	Administer 30 minutes before chemotherapy.		
Pre-Medications			
	LORAZepam (ATIVAN) tablet 0.5 mg		
	Dose: 0.5 mg	Route: oral	once for 1 dose Offset: 30 Minutes
	Instructions:		
	Administer 30 minutes before chemotherapy.		
Chemotherapy			
	mesna (MESNEX) 250 mg/m2 in sodium chloride 0.9 % 100 mL IVPB		
	Dose: 250 mg/m2	Route: intravenous	once over 30 Minutes for 1 dose Offset: 1 Hours
	Instructions:		
	Administer before Mesna/Cyclophosphamide infusion.		
Ingredients:	Name	Type	Dose
	MESNA 100 MG/ML	Medications	250 mg/m2
	INTRAVENOUS		
	SOLUTION		
	SODIUM	QS Base	100 mL
	CHLORIDE 0.9 %		
	INTRAVENOUS		
		Selected	Adds Vol.
	Main	Yes	
	Ingredient		

		SOLUTION DEXTROSE 5 % IN QS Base WATER (D5W) INTRAVENOUS SOLUTION	No	Yes
		cyclophosphamide (CYTOXAN) 500 mg/m2, mesna (MESNEX) 500 mg/m2 in dextrose 5% 500 mL chemo IVPB		
	Dose: 500 mg/m2	Route: intravenous	once over 2 Hours for 1 dose Offset: 1.5 Hours	
Ingredients:	Name	Type	Dose	Selected Adds Vol.
	CYCLOPHOSPHAM	Medications	500	Main Yes
	IDE 1 GRAM		mg/m2	Ingredient
	INTRAVENOUS SOLUTION			
	MESNA 100 MG/ML	Medications	500	Yes Yes
	INTRAVENOUS SOLUTION		mg/m2	
	DEXTROSE 5 % IN	Base	500 mL	Yes Yes
	WATER (D5W)			
	INTRAVENOUS SOLUTION			
	fludarabine (FLUDARA) 30 mg/m2 in sodium chloride 0.9 % 100 mL chemo IVPB			
	Dose: 30 mg/m2	Route: intravenous	once over 30 Minutes for 1 dose Offset: 3.5 Hours	
Instructions:	Use within 8 hours of preparation.			
Ingredients:	Name	Type	Dose	Selected Adds Vol.
	FLUDARABINE 50	Medications	30 mg/m2	Main Yes
	MG INTRAVENOUS SOLUTION			Ingredient
	SODIUM	QS Base	100 mL	Yes Yes
	CHLORIDE 0.9 %			
	INTRAVENOUS SOLUTION			
	DEXTROSE 5 % IN	QS Base	100 mL	No Yes
	WATER (D5W)			
	INTRAVENOUS SOLUTION			
	mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)			
	Dose: 500 mg/m2	Route: oral	once for 1 dose Offset: 5.5 Hours	
Instructions:	Administer TWO hours AFTER Mesna/Cyclophosphamide infusion completed.			
	mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)			
	Dose: 500 mg/m2	Route: oral	once for 1 dose Offset: 9.5 Hours	
Instructions:	Administer SIX hours AFTER Mesna/Cyclophosphamide infusion completed.			

Supportive Care

promethazine (PHENERGAN) injection 25 mg

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

Discharge Nursing Orders

ONC NURSING COMMUNICATION 76

Interval: -- Occurrences: --

Comments: Discontinue IV.

Discharge Nursing Orders

 sodium chloride 0.9 % flush 20 mL

Dose: 20 mL Route: intravenous PRN

 HEParin, porcine (PF) injection 500 Units

Dose: 500 Units Route: intra-catheter once PRN

Start: S

Instructions:

Concentration: 100 units/mL. Heparin flush for
Implanted Vascular Access Device
maintenance.**Day -3, Cycle 1**

Perform every 1 day x1

Appointment Requests

INFUSION APPOINTMENT REQUEST

Interval: -- Occurrences: --

Line Flush

sodium chloride 0.9 % flush 20 mLDose: 20 mL Route: intravenous PRN
Start: S

Nursing Orders

sodium chloride 0.9 % infusion 250 mL

Dose: 250 mL Route: intravenous once @ 30 mL/hr for 1 dose

Start: S

Instructions:
To keep vein open.

Hydration

sodium chloride 0.9 % infusion

Dose: 150 mL/hr Route: intravenous once over 6 Hours for 1 dose

Instructions:

Start 1 hour prior to chemotherapy.

Pre-Medications

ondansetron (ZOFTRAN) tablet 16 mgDose: 16 mg Route: oral once for 1 dose
Offset: 30 Minutes

Instructions:

Administer 30 minutes before chemotherapy.

Pre-Medications

LORAZepam (ATIVAN) tablet 0.5 mgDose: 0.5 mg Route: oral once for 1 dose
Offset: 30 Minutes

Instructions:

Administer 30 minutes before chemotherapy.

Chemotherapy

mesna (MESNEX) 250 mg/m2 in sodium chloride 0.9 % 100 mL IVPBDose: 250 mg/m2 Route: intravenous once over 30 Minutes for 1 dose
Offset: 1 Hours

Instructions:

Administer before Mesna/Cyclophosphamide infusion.

Ingredients:**Name****Type****Dose****Selected Adds Vol.**

		MESNA 100 MG/ML Medications INTRAVENOUS SOLUTION SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	250 mg/m2 100 mL	Main Ingredient Yes Yes	Yes
		cyclophosphamide (CYTOXAN) 500 mg/m2, mesna (MESNEX) 500 mg/m2 in dextrose 5% 500 mL chemo IVPB			
		Dose: 500 mg/m2	Route: intravenous	once over 2 Hours for 1 dose Offset: 1.5 Hours	
	Ingredients:	Name	Type	Dose	Selected Main Ingredient
		CYCLOPHOSPHAM IDE 1 GRAM INTRAVENOUS SOLUTION	Medications	500 mg/m2	Yes
		MESNA 100 MG/ML Medications INTRAVENOUS SOLUTION	Medications	500 mg/m2	Yes
		DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base	500 mL	Yes
		fludarabine (FLUDARA) 30 mg/m2 in sodium chloride 0.9 % 100 mL chemo IVPB			
		Dose: 30 mg/m2	Route: intravenous	once over 30 Minutes for 1 dose Offset: 3.5 Hours	
	Instructions:	Use within 8 hours of preparation.			
	Ingredients:	Name	Type	Dose	Selected Main Ingredient
		FLUDARABINE 50 MG INTRAVENOUS SOLUTION	Medications	30 mg/m2	Yes
		SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	Base	100 mL	Yes
		DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base	100 mL	No
		mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)			
		Dose: 500 mg/m2	Route: oral	once for 1 dose Offset: 5.5 Hours	
	Instructions:	Administer TWO hours AFTER Mesna/Cyclophosphamide infusion completed.			
		mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)			
		Dose: 500 mg/m2	Route: oral	once for 1 dose Offset: 9.5 Hours	
	Instructions:	Administer SIX hours AFTER Mesna/Cyclophosphamide infusion completed.			

Supportive Care **promethazine (PHENERGAN) injection 25 mg**

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

Discharge Nursing Orders**ONC NURSING COMMUNICATION 76**

Interval: -- Occurrences: --
Comments: Discontinue IV.

Discharge Nursing Orders **sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL Route: intravenous PRN

 HEparin, porcine (PF) injection 500 Units

Dose: 500 Units Route: intra-catheter once PRN
Start: S
Instructions:
Concentration: 100 units/mL. Heparin flush for
Implanted Vascular Access Device
maintenance.

Day -2, Cycle 1

Perform every 1 day x1

Appointment Requests**INFUSION APPOINTMENT REQUEST**

Interval: -- Occurrences: --

Line Flush**sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL Route: intravenous PRN
Start: S

Nursing Orders**sodium chloride 0.9 % infusion 250 mL**

Dose: 250 mL Route: intravenous once @ 30 mL/hr for 1 dose
Start: S
Instructions:
To keep vein open.

Hydration**sodium chloride 0.9 % infusion**

Dose: 150 mL/hr Route: intravenous once over 6 Hours for 1 dose

Instructions:

Start 1 hour prior to chemotherapy.

Pre-Medications**ondansetron (ZOFTRAN) tablet 16 mg**

Dose: 16 mg Route: oral once for 1 dose
Offset: 30 Minutes

Instructions:

Administer 30 minutes before chemotherapy.

Pre-Medications**LORAZepam (ATIVAN) tablet 0.5 mg**

Dose: 0.5 mg Route: oral once for 1 dose
Offset: 30 Minutes

Instructions:

Administer 30 minutes before chemotherapy.

Chemotherapy**mesna (MESNEX) 250 mg/m² in sodium chloride 0.9 % 100 mL IVPB**

	Dose: 250 mg/m2	Route: intravenous	once over 30 Minutes for 1 dose
		Offset: 1 Hours	
	Instructions:		
	Administer before Mesna/Cyclophosphamide infusion.		
	Ingredients:	Name	Type
	MESNA 100 MG/ML Medications	250 mg/m2	Selected
	INTRAVENOUS SOLUTION	Main Ingredient	Yes
	SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	QS Base	Yes
	DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	QS Base	No
		100 mL	Yes

	cyclophosphamide (CYTOXAN) 500 mg/m2, mesna (MESNEX) 500 mg/m2 in dextrose 5% 500 mL chemo IVPB		
	Dose: 500 mg/m2	Route: intravenous	once over 2 Hours for 1 dose
			Offset: 1.5 Hours
	Ingredients:	Name	Type
	CYCLOPHOSPHAM 500 mg/m2	Medications	500 mg/m2
	IDE 1 GRAM INTRAVENOUS SOLUTION	Main Ingredient	Yes
	MESNA 100 MG/ML Medications	500 mg/m2	Selected
	INTRAVENOUS SOLUTION	Yes	Yes
	DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	Base	500 mL
		Yes	Yes

	fludarabine (FLUDARA) 30 mg/m2 in sodium chloride 0.9 % 100 mL chemo IVPB		
	Dose: 30 mg/m2	Route: intravenous	once over 30 Minutes for 1 dose
			Offset: 3.5 Hours
	Instructions:		
	Use within 8 hours of preparation.		
	Ingredients:	Name	Type
	FLUDARABINE 50 MG INTRAVENOUS SOLUTION	Medications	30 mg/m2
	SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION	QS Base	100 mL
	DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	QS Base	100 mL
		No	Yes

	mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)		
	Dose: 500 mg/m2	Route: oral	once for 1 dose
			Offset: 5.5 Hours
	Instructions:		
	Administer TWO hours AFTER Mesna/Cyclophosphamide infusion completed.		
	mesna (MESNEX) oral solution 500 mg/m2 (Treatment Plan)		

		Dose: 500 mg/m ²	Route: oral	once for 1 dose			
		Instructions:		Offset: 9.5 Hours			
Administer SIX hours AFTER Mesna/Cyclophosphamide infusion completed.							
Supportive Care							
		<input type="checkbox"/> promethazine (PHENERGAN) injection 25 mg					
		Dose: 25 mg	Route: intravenous	every 4 hours PRN			
		Start: S					
Discharge Nursing Orders							
ONC NURSING COMMUNICATION 76							
		Interval: --	Occurrences: --				
		Comments:	Discontinue IV.				
Discharge Nursing Orders							
		<input checked="" type="checkbox"/> sodium chloride 0.9 % flush 20 mL					
		Dose: 20 mL	Route: intravenous	PRN			
		<input checked="" type="checkbox"/> HEParin, porcine (PF) injection 500 Units					
		Dose: 500 Units	Route: intra-catheter	once PRN			
		Start: S					
		Instructions:					
		Concentration: 100 units/mL. Heparin flush for Implanted Vascular Access Device maintenance.					
Day -1, Cycle 1							
Nursing Orders							
		TREATMENT CONDITIONS 11					
		Interval: --	Occurrences: --				
		Comments:	HOLD and notify provider if ANC LESS than 1000; Platelets LESS than 100,000; AST or ALT > 3 and up to 5x Upper Normal Limit or Total Bilirubin > 1.5 and up to 3x Upper Normal Limit; Creatinine > 1.5 and up to 6x Upper Normal Limit or > 1.5x from baseline.				
Line Flush							
		sodium chloride 0.9 % flush 20 mL					
		Dose: 20 mL	Route: intravenous	PRN			
		Start: S					
Nursing Orders							
		sodium chloride 0.9 % infusion 250 mL					
		Dose: 250 mL	Route: intravenous	once @ 30 mL/hr for 1 dose			
		Start: S					
		Instructions:					
		To keep vein open.					
Chemotherapy							
		nivolumab (OPDIVO) 240 mg in sodium chloride 0.9% 100 mL IVPB					
		Dose: 240 mg	Route: intravenous	once over 30 Minutes for 1 dose			
		Start: S					
		Instructions:					
		Administer with low protein binding 0.22 micron in-line filter. Do not shake. Do not mix with other medications. Flush IV line with NS at the end of infusion.					
		Ingredients:	Name	Type			
			NIVOLUMAB 240	Medications			
				Dose			
				240 mg			
		Selected	Adds Vol.				
		Main	Yes				

MG/24 ML INTRAVENOUS SOLUTION SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION	QS Base	76 mL	Yes	Yes
		100 mL	No	Yes

Hematology & Oncology Hypersensitivity Reaction Standing Order

ONC NURSING COMMUNICATION 82

Interval: -- Occurrences: --
 Comments: Grade 1 - MILD Symptoms (cutaneous and subcutaneous symptoms only – itching, flushing, periorbital edema, rash, or runny nose)
 1. Stop the infusion.
 2. Place the patient on continuous monitoring.
 3. Obtain vital signs.
 4. Administer Normal Saline at 50 mL per hour using a new bag and new intravenous tubing.
 5. If greater than or equal to 30 minutes since the last dose of Diphenhydramine, administer Diphenhydramine 25 mg intravenous once.
 6. If less than 30 minutes since the last dose of Diphenhydramine, administer Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
 7. Notify the treating physician.
 8. If no improvement after 15 minutes, advance level of care to Grade 2 (Moderate) or Grade 3 (Severe).
 9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 4

Interval: -- Occurrences: --
 Comments: Grade 2 – MODERATE Symptoms (cardiovascular, respiratory, or gastrointestinal symptoms – shortness of breath, wheezing, nausea, vomiting, dizziness, diaphoresis, throat or chest tightness, abdominal or back pain)
 1. Stop the infusion.
 2. Notify the CERT team and treating physician immediately.
 3. Place the patient on continuous monitoring.
 4. Obtain vital signs.
 5. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O₂ saturation of greater than or equal to 92%.
 6. Administer Normal Saline at 150 mL per hour using a new bag and new intravenous tubing.
 7. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous), Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
 8. If no improvement after 15 minutes, advance level of care to Grade 3 (Severe).
 9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 83

Interval: -- Occurrences: --
 Comments: Grade 3 – SEVERE Symptoms (hypoxia, hypotension, or neurologic compromise – cyanosis or O₂ saturation less than 92%, hypotension with systolic blood pressure less than 90 mmHg, confusion, collapse).

loss of consciousness, or incontinence)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. If heart rate is less than 50 or greater than 120, or blood pressure is less than 90/50 mmHg, place patient in reclined or flattened position.
6. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O₂ saturation of greater than or equal to 92%.
7. Administer Normal Saline at 1000 mL intravenous bolus using a new bag and new intravenous tubing.
8. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous) and Famotidine 20 mg intravenous once.
9. Administer Epinephrine (1:1000) 0.3 mg subcutaneous.
10. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

diphenhydramine (BENADRYL) injection 25

mg

fexofenadine (ALLEGRA) tablet 180 mg

famotidine (PEPCID) 20 mg/2 mL injection 20

hydrocortisone sodium succinate (Solu-CORTEF) injection 100 mg

INTERACTIONS (ADRENALENNIN) 1 (10 - 1 ADULT)

**epiNEPHRine (ADRENALIN) 1 mg/10 mL ADULT
injection syringe 0.3 mg**

Discharge Nursing Orders

ONC NURSING COMMUNICATION 76

Interval: -- Occurrences: --
Comments: Discontinue IV.

Discharge Nursing Orders

sodium chloride 0.9 % flush 20 mL
Dose: 20 mL Route: intravenous PRN

HEParin, porcine (PF) injection 500 Units
Dose: 500 Units Route: intra-catheter once PRN
Start: S
Instructions:
Concentration: 100 units/mL. Heparin flush for
Implanted Vascular Access Device
maintenance.

Nursing Orders**TREATMENT CONDITIONS 11**

Interval: --

Occurrences: --

Comments:

HOLD and notify provider if ANC LESS than 1000; Platelets LESS than 100,000; AST or ALT > 3 and up to 5x Upper Normal Limit or Total Bilirubin > 1.5 and up to 3x Upper Normal Limit; Creatinine > 1.5 and up to 6x Upper Normal Limit or > 1.5x from baseline.

Line Flush**sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL

Route: intravenous

PRN

Start: S

Nursing Orders**sodium chloride 0.9 % infusion 250 mL**

Dose: 250 mL

Route: intravenous

once @ 30 mL/hr for 1 dose

Start: S

Instructions:

To keep vein open.

Chemotherapy**nivolumab (OPDIVO) 240 mg in sodium chloride 0.9% 100 mL IVPB**

Dose: 240 mg

Route: intravenous

once over 30 Minutes for 1 dose

Start: S

Instructions:

Administer with low protein binding 0.22 micron in-line filter. Do not shake. Do not mix with other medications. Flush IV line with NS at the end of infusion.

Ingredients:

Name	Type	Dose	Selected	Adds Vol.
NIVOLUMAB 240 MG/24 ML	Medications	240 mg	Main Ingredient	Yes
INTRAVENOUS SOLUTION				
SODIUM CHLORIDE 0.9 %	QS Base	76 mL	Yes	Yes
INTRAVENOUS SOLUTION				
DEXTROSE 5 % IN WATER (D5W)	QS Base	100 mL	No	Yes
INTRAVENOUS SOLUTION				

Hematology & Oncology Hypersensitivity Reaction Standing Order**ONC NURSING COMMUNICATION 82**

Interval: --

Occurrences: --

Comments:

Grade 1 - MILD Symptoms (cutaneous and subcutaneous symptoms only – itching, flushing, periorbital edema, rash, or runny nose)

1. Stop the infusion.
2. Place the patient on continuous monitoring.
3. Obtain vital signs.
4. Administer Normal Saline at 50 mL per hour using a new bag and new intravenous tubing.
5. If greater than or equal to 30 minutes since the last dose of Diphenhydramine, administer Diphenhydramine 25 mg intravenous once.
6. If less than 30 minutes since the last dose of Diphenhydramine, administer Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
7. Notify the treating physician.
8. If no improvement after 15 minutes, advance level of care to Grade 2 (Moderate) or Grade 3 (Severe).

9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 4

Interval: --

Comments:

Occurrences: --

Grade 2 – MODERATE Symptoms (cardiovascular, respiratory, or gastrointestinal symptoms – shortness of breath, wheezing, nausea, vomiting, dizziness, diaphoresis, throat or chest tightness, abdominal or back pain)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O2 saturation of greater than or equal to 92%.
6. Administer Normal Saline at 150 mL per hour using a new bag and new intravenous tubing.
7. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous), Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
8. If no improvement after 15 minutes, advance level of care to Grade 3 (Severe).
9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 83

Interval: --

Comments:

Occurrences: --

Grade 3 – SEVERE Symptoms (hypoxia, hypotension, or neurologic compromise – cyanosis or O2 saturation less than 92%, hypotension with systolic blood pressure less than 90 mmHg, confusion, collapse, loss of consciousness, or incontinence)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. If heart rate is less than 50 or greater than 120, or blood pressure is less than 90/50 mmHg, place patient in reclined or flattened position.
6. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O2 saturation of greater than or equal to 92%.
7. Administer Normal Saline at 1000 mL intravenous bolus using a new bag and new intravenous tubing.
8. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous) and Famotidine 20 mg intravenous once.
9. Administer Epinephrine (1:1000) 0.3 mg subcutaneous.
10. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

diphenhydramine (BENADRYL) injection 25

mg

Dose: 25 mg

Route: intravenous

PRN

Start: S

fexofenadine (ALLEGRA) tablet 180 mg

Dose: 180 mg

Route: oral

PRN

Start: S

famotidine (PEPCID) 20 mg/2 mL injection 20

mg

Dose: 20 mg

Route: intravenous

PRN

Start: S

		<p>hydrocortisone sodium succinate (Solu-CORTEF) injection 100 mg Dose: 100 mg Route: intravenous PRN</p> <p>dexamethasone (DECADRON) injection 4 mg Dose: 4 mg Route: intravenous PRN Start: S</p> <p>epINEPHrine (ADRENALIN) 1 mg/10 mL ADULT injection syringe 0.3 mg Dose: 0.3 mg Route: subcutaneous PRN Start: S</p>					
		<p>Discharge Nursing Orders</p> <p>ONC NURSING COMMUNICATION 76 Interval: -- Occurrences: -- Comments: Discontinue IV.</p>					
		<p>Discharge Nursing Orders</p> <p><input checked="" type="checkbox"/> sodium chloride 0.9 % flush 20 mL Dose: 20 mL Route: intravenous PRN</p>					
		<p><input checked="" type="checkbox"/> HEParin, porcine (PF) injection 500 Units Dose: 500 Units Route: intra-catheter once PRN Start: S Instructions: Concentration: 100 units/mL. Heparin flush for Implanted Vascular Access Device maintenance.</p>					
Day 27, Cycle 1		Perform every 1 day x1					
	Nursing Orders	<p>TREATMENT CONDITIONS 11 Interval: -- Occurrences: -- Comments: HOLD and notify provider if ANC LESS than 1000; Platelets LESS than 100,000; AST or ALT > 3 and up to 5x Upper Normal Limit or Total Bilirubin > 1.5 and up to 3x Upper Normal Limit; Creatinine > 1.5 and up to 6x Upper Normal Limit or > 1.5x from baseline.</p>					
	Line Flush	<p>sodium chloride 0.9 % flush 20 mL Dose: 20 mL Route: intravenous PRN Start: S</p>					
	Nursing Orders	<p>sodium chloride 0.9 % infusion 250 mL Dose: 250 mL Route: intravenous once @ 30 mL/hr for 1 dose Start: S Instructions: To keep vein open.</p>					
	Chemotherapy	<p>nivolumab (OPDIVO) 240 mg in sodium chloride 0.9% 100 mL IVPB Dose: 240 mg Route: intravenous once over 30 Minutes for 1 dose Start: S Instructions: Administer with low protein binding 0.22 micron in-line filter. Do not shake. Do not mix with other medications. Flush IV line with NS at the end of infusion.</p>					
		<table border="1"> <thead> <tr> <th>Ingredients:</th> <th>Name</th> <th>Type</th> <th>Dose</th> <th>Selected Adds Vol.</th> </tr> </thead> </table>	Ingredients:	Name	Type	Dose	Selected Adds Vol.
Ingredients:	Name	Type	Dose	Selected Adds Vol.			

NIVOLUMAB 240 MG/24 ML INTRAVENOUS SOLUTION	Medications	240 mg QS Base	Main Ingredient	Yes
SODIUM CHLORIDE 0.9 % INTRAVENOUS SOLUTION		76 mL	Yes	Yes
DEXTROSE 5 % IN WATER (D5W) INTRAVENOUS SOLUTION		100 mL	No	Yes

Hematology & Oncology Hypersensitivity Reaction Standing Order

ONC NURSING COMMUNICATION 82

Interval: -- Occurrences: --

Comments:

Grade 1 - MILD Symptoms (cutaneous and subcutaneous symptoms only – itching, flushing, periorbital edema, rash, or runny nose)

1. Stop the infusion.
2. Place the patient on continuous monitoring.
3. Obtain vital signs.
4. Administer Normal Saline at 50 mL per hour using a new bag and new intravenous tubing.
5. If greater than or equal to 30 minutes since the last dose of Diphenhydramine, administer Diphenhydramine 25 mg intravenous once.
6. If less than 30 minutes since the last dose of Diphenhydramine, administer Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
7. Notify the treating physician.
8. If no improvement after 15 minutes, advance level of care to Grade 2 (Moderate) or Grade 3 (Severe).
9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 4

Interval: -- Occurrences: --

Comments:

Grade 2 – MODERATE Symptoms (cardiovascular, respiratory, or gastrointestinal symptoms – shortness of breath, wheezing, nausea, vomiting, dizziness, diaphoresis, throat or chest tightness, abdominal or back pain)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O₂ saturation of greater than or equal to 92%.
6. Administer Normal Saline at 150 mL per hour using a new bag and new intravenous tubing.
7. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous), Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
8. If no improvement after 15 minutes, advance level of care to Grade 3 (Severe).
9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 83

Interval: -- Occurrences: --

Comments:

Grade 3 – SEVERE Symptoms (hypoxia, hypotension, or neurologic compromise – cyanosis or O₂ saturation less than 92%. hypotension

Nursing Orders**TREATMENT CONDITIONS 11**

Interval: --

Occurrences: --

Comments:

HOLD and notify provider if ANC LESS than 1000; Platelets LESS than 100,000; AST or ALT > 3 and up to 5x Upper Normal Limit or Total Bilirubin > 1.5 and up to 3x Upper Normal Limit; Creatinine > 1.5 and up to 6x Upper Normal Limit or > 1.5x from baseline.

Line Flush**sodium chloride 0.9 % flush 20 mL**

Dose: 20 mL

Route: intravenous

PRN

Start: S

Nursing Orders**sodium chloride 0.9 % infusion 250 mL**

Dose: 250 mL

Route: intravenous

once @ 30 mL/hr for 1 dose

Start: S

Instructions:

To keep vein open.

Chemotherapy**nivolumab (OPDIVO) 240 mg in sodium chloride 0.9% 100 mL IVPB**

Dose: 240 mg

Route: intravenous

once over 30 Minutes for 1 dose

Start: S

Instructions:

Administer with low protein binding 0.22 micron in-line filter. Do not shake. Do not mix with other medications. Flush IV line with NS at the end of infusion.

Ingredients:

Name	Type	Dose	Selected	Adds Vol.
NIVOLUMAB 240 MG/24 ML	Medications	240 mg	Main Ingredient	Yes
INTRAVENOUS SOLUTION				
SODIUM CHLORIDE 0.9 %	QS Base	76 mL	Yes	Yes
INTRAVENOUS SOLUTION				
DEXTROSE 5 % IN WATER (D5W)	QS Base	100 mL	No	Yes
INTRAVENOUS SOLUTION				

Hematology & Oncology Hypersensitivity Reaction Standing Order**ONC NURSING COMMUNICATION 82**

Interval: --

Occurrences: --

Comments:

Grade 1 - MILD Symptoms (cutaneous and subcutaneous symptoms only – itching, flushing, periorbital edema, rash, or runny nose)

1. Stop the infusion.
2. Place the patient on continuous monitoring.
3. Obtain vital signs.
4. Administer Normal Saline at 50 mL per hour using a new bag and new intravenous tubing.
5. If greater than or equal to 30 minutes since the last dose of Diphenhydramine, administer Diphenhydramine 25 mg intravenous once.
6. If less than 30 minutes since the last dose of Diphenhydramine, administer Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
7. Notify the treating physician.
8. If no improvement after 15 minutes, advance level of care to Grade 2 (Moderate) or Grade 3 (Severe).

9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 4

Interval: --

Comments:

Occurrences: --

Grade 2 – MODERATE Symptoms (cardiovascular, respiratory, or gastrointestinal symptoms – shortness of breath, wheezing, nausea, vomiting, dizziness, diaphoresis, throat or chest tightness, abdominal or back pain)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O2 saturation of greater than or equal to 92%.
6. Administer Normal Saline at 150 mL per hour using a new bag and new intravenous tubing.
7. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous), Fexofenadine 180 mg orally and Famotidine 20 mg intravenous once.
8. If no improvement after 15 minutes, advance level of care to Grade 3 (Severe).
9. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

ONC NURSING COMMUNICATION 83

Interval: --

Comments:

Occurrences: --

Grade 3 – SEVERE Symptoms (hypoxia, hypotension, or neurologic compromise – cyanosis or O2 saturation less than 92%, hypotension with systolic blood pressure less than 90 mmHg, confusion, collapse, loss of consciousness, or incontinence)

1. Stop the infusion.
2. Notify the CERT team and treating physician immediately.
3. Place the patient on continuous monitoring.
4. Obtain vital signs.
5. If heart rate is less than 50 or greater than 120, or blood pressure is less than 90/50 mmHg, place patient in reclined or flattened position.
6. Administer Oxygen at 2 L per minute via nasal cannula. Titrate to maintain O2 saturation of greater than or equal to 92%.
7. Administer Normal Saline at 1000 mL intravenous bolus using a new bag and new intravenous tubing.
8. Administer Hydrocortisone 100 mg intravenous (if patient has allergy to Hydrocortisone, please administer Dexamethasone 4 mg intravenous) and Famotidine 20 mg intravenous once.
9. Administer Epinephrine (1:1000) 0.3 mg subcutaneous.
10. Assess vital signs every 15 minutes until resolution of symptoms or otherwise ordered by covering physician.

diphenhydramine (BENADRYL) injection 25

mg

Dose: 25 mg

Route: intravenous

PRN

Start: S

fexofenadine (ALLEGRA) tablet 180 mg

Dose: 180 mg

Route: oral

PRN

Start: S

famotidine (PEPCID) 20 mg/2 mL injection 20

mg

Dose: 20 mg

Route: intravenous

PRN

Start: S

**hydrocortisone sodium succinate
(Solu-CORTEF) injection 100 mg**
Dose: 100 mg Route: intravenous PRN

dexamethasone (DECADRON) injection 4 mg
Dose: 4 mg Route: intravenous PRN
Start: S

**epINEPHrine (ADRENALIN) 1 mg/10 mL ADULT
injection syringe 0.3 mg**
Dose: 0.3 mg Route: subcutaneous PRN
Start: S

Discharge Nursing Orders

ONC NURSING COMMUNICATION 76
Interval: -- Occurrences: --
Comments: Discontinue IV.

Discharge Nursing Orders

sodium chloride 0.9 % flush 20 mL
Dose: 20 mL Route: intravenous PRN

HEParin, porcine (PF) injection 500 Units
Dose: 500 Units Route: intra-catheter once PRN
Start: S
Instructions:
Concentration: 100 units/mL. Heparin flush for
Implanted Vascular Access Device
maintenance.