



HOMEWORK REVIEW

COURSE 1: HYPER-CVAD

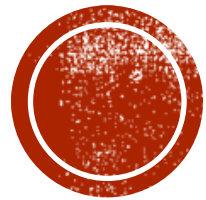
- Cyclophosphamide 300mg/m² over 3 hours every 12 hours for 6 doses on day 1 (8/1/17), day 2 (8/2/17), & day 3 (8/3/17). Start first dose at 8am.
- Doxorubicin 50mg/m² over 48 hours on day 4 (8/4/17) at 8am.
- Vincristine 2mg over 15 minutes on day 4 (8/4/17) at 8am. Repeat on day 11 (8-11-17) at 8am.
- Dexamethasone 40mg/day IV on day 1 (8/1/17), day 2 (8/2/17), day 3 (8/3/17) and day 4 (8/4/17) and day 11 (8/11/17), day 12 (8/12/17), day 13 (8/13/17), and day 14 (8/14/17). Administer 30 minutes prior to chemotherapy.
- Filgrastim 5mcg/Kg subq daily until ANC > 500. Start day 8 (8/8/17) at 8am.



COURSE 2: MTX/ARA-C

- Methotrexate 200mg/m² over 2 hours IV on day 1 (9/5/17) at 8am
- Methotrexate 800mg/m² over 22 hours on day 1 (9/5/17) at 10am
- Cytarabine 3,000mg/m² IV over two hours every 12 hours for 4 doses on day 2 (9/6/17), and day 3 (9/7/17). First dose at 8am.
- Leucovorin 50mg IV every 6 hours until MTX level <50nM. Start day 2 (9/6/17) at 8pm.
- Filgrastim 5mcg/Kg subq daily until ANC > 500. Start on day 4 (9/8/17) at 8 pm.





BSA CALCULATIONS

BOB TAYLOR METRIC CONVERSIONS

height in cm = ht in inches x 2.54

**height in cm = 75 x
2.54**

height = 190.5 cm

weight in kg = weight in lbs ÷ 2.2

weight in kg = 270 ÷ 2.2

weight = 122.7 kg



BOB'S BSA

190.5 CM/122.7 KG OR 6'3"/270 LBS.

Metric

$$\sqrt{\frac{ht \text{ in cm} \times wt \text{ in kg}}{3600}}$$

$$\sqrt{\frac{190.5 \times 122.7}{3600}}$$

$$\sqrt{\frac{23374.35}{3600}}$$

$$\sqrt{6.49}$$

$$BSA = 2.55$$

English

$$\sqrt{\frac{ht \text{ in inches} \times wt \text{ in lbs}}{3131}}$$

$$\sqrt{\frac{75 \times 270}{3131}}$$

$$\sqrt{\frac{20250}{3131}}$$

$$\sqrt{6.47}$$

$$BSA = 2.54$$



SARAH ADAMS METRIC CONVERSIONS

5'1" AND 90 LBS.

height in cm = ht in inches x 2.54

$$\text{height in cm} = 61 \times 2.54$$

$$\text{height} = 154.94 \text{ cm}$$

weight in kg = weight in lbs ÷ 2.2

$$\text{weight in kg} = 90 \div 2.2$$

$$\text{weight} = 40.9 \text{ kg}$$



SARAH'S BSA

154.94 CM/40.9 KG OR 5'1"/90 LBS.

$$\sqrt{\frac{ht \text{ in cm} \times wt \text{ in kg}}{3600}}$$

$$\sqrt{\frac{154.94 \times 40.9}{3600}}$$

$$\sqrt{\frac{6337.05}{3600}}$$

$$\sqrt{1.76}$$

$$\text{BSA} = 1.33$$

$$\sqrt{\frac{ht \text{ in inches} \times wt \text{ in lbs}}{3131}}$$

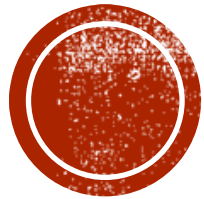
$$\sqrt{\frac{61 \times 90}{3131}}$$

$$\sqrt{\frac{5490}{3131}}$$

$$\sqrt{1.75}$$

$$\text{BSA} = 1.32$$





DRUG CALCULATIONS COURSE 1

CYCLOPHOSPHAMIDE DOSING

(300 MG/M²)

Bob (BSA: 2.54)

Sarah (BSA:1.32)

Total Dose = Ordered Dose x BSA

total dose = 300 mg/m² x 2.54 m²

total dose = 762 mg

Total Dose = Ordered Dose x BSA

total dose = 300 mg/m² x 1.32 m²

total dose = 396 mg



DOXORUBICIN DOSING (50 MG/M²)

Bob (BSA: 2.54)

Dose = Ordered Dose x BSA

total dose = 50 mg/m² x 2.54 m²

total dose = 127 mg

Sarah (BSA: 1.32)

Dose = Ordered Dose x BSA

total dose = 50 mg/m² x 1.32 m²

total dose = 66 mg



VINCRIStINE DOSING (2MG)

Bob

- 2mg

Sarah

- 2mg



FILGRASTIM DOSING (5 MCG/KG)

Bob

Wt: 122.7 kg

*Dose = Ordered Dose x Wt. in
Kg*

total dose = 5 mcg/kg x 122.7 kg

total dose = 613.5 mcg

Sarah

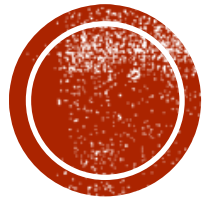
Wt: 40.9 kg

Total Dose = Ordered Dose x Wt in Kg

total dose = 5 mcg/kg x 40.9 kg

total dose = 204.5 mcg





DRUG CALCULATION COURSE 2

METHOTREXATE BOLUS DOSING (200 MG/M²)

Bob's BSA: 2.54

Sarah BSA: 1.32

Total Dose = Ordered Dose x BSA

total dose = 200 mg/m² x 2.54 m²

total dose = 508 mg

Dose = Ordered Dose x BSA

total dose = 200 mg/m² x 1.32 m²

total dose = 264 mg



METHOTREXATE INFUSION DOSING (800MG/M²)

Bob BSA: 2.54

Sarah BSA: 1.32

Dose = Ordered Dose x BSA

total dose = 800 mg/m² x 2.54 m²

total dose = 2032 mg

Total Dose = Ordered Dose x BSA

total dose = 800mg/m² x 1.32 m²

total dose = 1056 mg



LEUCOVORIN

Ordered dose: 50 mg IV every 6 hours until MTX level < 0.05 . Starting day 2 at 8pm

- Dose will be the same for both Bob and Sarah: 50 mg every 6 hours starting day 2 at 8 pm



CYTARABINE DOSING (3,000 MG/M²)

Bob's BSA: 2.54

Sarah BSA: 1.32)

Dose = Ordered Dose x BSA

$$\text{total dose} = 3000 \text{ mg/m}^2 \times 2.54 \text{ m}^2$$

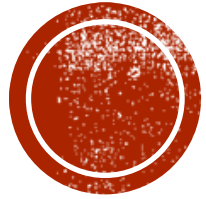
$$\text{total dose} = 7620 \text{ mg}$$

Total Dose = Ordered Dose x BSA

$$\text{total dose} = 3000 \text{ mg/m}^2 \times 1.32 \text{ m}^2$$

$$\text{total dose} = 3960 \text{ mg}$$





AGENT CHART

CYCLOPHOSPHAMIDE

Pretreatment Physical Assessment

- Voiding habits
- Hematuria
- Heart rate and rhythm
- Auscultation of heart and lungs
- Diet

Labs & Diagnostic Studies

- Baseline urinalysis
- Urine dipstick analysis
- CBC
- Electrolytes
- EKG
- Cardiac enzymes (if toxicity is suspected)



CYCLOPHOSPHAMIDE

Dose reduction or Held Dose

- Hematuria
- EKG changes
- ARDS
- Severe or complicated Myelosuppression
- Severe GI toxicity

Education

- Hydration
- Void frequently
- Signs/symptoms of urinary obstruction
- Diet modification for N/V, diarrhea
- Neutropenic precautions
- Thrombocytopenic precautions
- Management of anemia related symptoms



DOXORUBICIN

Pretreatment Physical Assessment

- heart failure)
- Heart rate & rhythm
- Auscultation of heart and lungs
- H/o XRT

Labs & Diagnostic Studies

- MUGA or ECHO
- EKG
- LFT
- Cbc
- Electrolytes
- Cxray



DOXORUBICIN

Dose reduction or Held Dose

- Reduction in EF
- EKG changes

Patient & Family Education

- Will turn urine red
- S&S of heart failure
- Management of heart failure symptoms
- Management of N/V
- S&S of extravasation
- Flare reaction at injection site
- Flushing



VINCRIStINE

Pretreatment Physical Assessment

- Baseline sensory nerve function
- Baseline motor nerve function
- Presence of any facial palsies
- Bowel habits

Labs & Diagnostic Studies

- Cbc
- Electrolytes
- LFT



VINCRIStINE

Dose reduction or Held Dose

- Constipation
- Sensory neuropathy
- Motor neuropathy

Patient & Family Education

- S&S of extravasation
- Compliance to bowel regimen
- High fiber diet
- S&S of nerve dysfunction (motor and sensory)
- Management of neuropathies



FILGRASTIM

Pretreatment Physical Assessment

- Weight
- Pain

Labs & Diagnostic Studies

- CBC



FILGRASTIM

Dose reduction or Held Dose

- N/A

Patient & Family Education

- Bone pain



METHOTREXATE

Pretreatment Physical Assessment

- Mouth Hygiene & Dental Habits
- Assessment of oral mucosa
- Mental status
- Heart rate
- Auscultation of lungs
- Palpation of liver
- Prior XRT

Labs & Diagnostic Studies

- LFTs
- Mtx level
- CBC
- Electrolytes
- Ammonia level
- Urine pH



METHOTREXATE

Dose reduction or Held Dose

- Severe or complicated Myelosuppression
- Liver dysfunction
- Severe mucositis

Patient & Family Education

- Mouth care
- Pancytopenic precautions
- Will turn urine bright yellow
- Mtx level (<0.05)
- Management of N/V
- S&S of dehydration
- Hydration
- Sun Protection
- Skin Care



CYTARABINE

Assessment

- Gait and gross motor coordination
- Mental status
- Auscultation of lungs
- Prior XRT

Labs & Diagnostic Studies

- Cbc
- Electrolytes
- LFTs
- Cxray



CYTARABINE

Dose reduction or Held Dose

- Neurotoxicity
- Severe or complicated myelosuppression

Patient & Family Education

- Hydration
- S&S of dehydration
- S&S of neurotoxicity
- Skin care
- S&S of conjunctivitis



COMORBID CONDITIONS THAT COULD IMPACT DOSING


- Heart disease
- Lung disease
- Liver disease
- Kidney disease
- Diabetes
- Pain disorders
- Ulcerative colitis
- Crohn's Disease
- Urinary Retention
- Amputation
- Autoimmune disorders
- Hematologic Disorders
- Prior XRT

The list goes on and on...



Course 1 Calendar

(Cyclophosphamide)

	Cycl. 8a-11a Cycl. 8p-11p 1	Cycl. 8a-11a Cycl. 8a-11p 2	Cycl. 8a-11a Cycl. 8p-11p 3	4	5	
	8	9	10	11	12	
						

Course 1 Calendar

(Doxorubicin)

	Cycl. 8a-11a Cycl. 8p-11p 1	Cycl. 8a-11a Cycl. 8a-11p 2	Cycl. 8a-11a Cycl. 8p-11p 3	Doxo. 8a 4	Doxo. 5	Doxo. 8a (end) 6
7	8	9	10	11	12	13
14						



Course 1 Calendar

(Vincristine)

	Cycl. 8a-11a Cycl. 8p-11p 1	Cycl. 8a-11a Cycl. 8a-11p 2	Cycl. 8a-11a Cycl. 8p-11p 3	Doxo. 8a Vin. 8a 4	Doxo. 5	Doxo. 8a (end) 6
7	8	9	10	Vinc. 8a 11	12	13
14						



Course 1 Calendar

(Dexamethasone)

	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p	Dex. 730a Cycl. 8a-11a Cycl. 8a-11p	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p	Dex. 730a Doxo. 8a Vin. 8a	 Doxo.	 Doxo. 8a (end)
1	2	3	4	5	6	
				Dex. 730a Vinc. 8a	Dex. 730a	Dex. 730a
7	8	9	10	11	12	13
Dex. 730a						
14						



Course 1 Calendar

(Filgrastim)

	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p	Dex. 730a Cycl. 8a-11a Cycl. 8a-11p	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p	Dex. 730a Doxo. 8a Vin. 8a	 Doxo.	 Doxo. 8a (end)
	1	2	3	4	5	6
Filgr. 8a	Filgr. 8a	Filgr. 8a	Filgr. 8a	Dex. 730a Vinc. 8a	Dex. 730a	Dex. 730a
7	8	9	10	11	12	13
Dex. 8a						
14						



Complete Course 1 Calendar

	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p 1	Dex. 730a Cycl. 8a-11a Cycl. 8a-11p 2	Dex. 730a Cycl. 8a-11a Cycl. 8p-11p 3	Dex. 730a Doxo. 8a Vin. 8a 4	 Doxo. 5	 Doxo. 8a (end) 6
Filgr. 8a 7	Filgr. 8a 8	Filgr. 8a 9	Filgr. 8a 10	Dex. 730a Vinc. 8a 11	Dex. 730a 12	Dex. 730a 13
Dex. 730a 14						



Course 2 Calendar

(Methotrexate Bolus)

Mtx. 8a-10a

4

5

6

7

8

9

10



Course 2 Calendar

(Methotrexate Infusion)

Mtx. 8a-10a

Mtx. 10a

Mtx. 8a (end)

4

5

6

7

8

9

10



Course 2 Calendar

(Cytarabine)

	Mtx. 8a-10a					
	Mtx. 10a	Mtx. 8a (end)				
		Cytar. 8a-10a	Cytar. 8a-10a			
		Cytar. 8p-10p	Cytar. 8p-10p			
4	5	6	7	8	9	10



Course 2 Calendar

(Leucovorin)

			Leuc. 2a	Leuc. 2a	Leuc. 2a	
	Mtx. 8a-10a					
	Mtx. 10a	Mtx. 8a (end)	Leuc. 8a	Leuc. 8a	Leuc. 8a	
		Cytar. 8a-10a	Cytar. 8a-10a			
			Leuc. 2p	Leuc. 2p	Leuc. 2p	
		Cytar. 8p-10p	Cytar. 8p-10p			
		Leuc. 8p	Leuc. 8p	Leuc. 8p	Leuc. 8p	
4	5	6	7	8	9	10



Course 2 Calendar

(Filgrastim)

			Leuc. 2a	Leuc. 2a	Leuc. 2a	
	Mtx. 8a-10a					
	Mtx. 10a	Mtx. 8a (end)	Leuc. 8a	Leuc. 8a	Leuc. 8a	
		Cytar. 8a-10a	Cytar. 8a-10a			
			Leuc. 2p	Leuc. 2p	Leuc. 2p	
		Cytar. 8p-10p	Cytar. 8p-10p	Leuc. 8p	Leuc. 8p	
		Leuc. 8p	Leuc. 8p	Filgr. 8p	Filgr. 8a	Filgr. 8a
4	5	6	7	8	9	10



Complete Course 2 Calendar

	MTX 8a-10a		Leuc. 2a	Leuc. 2a	Leuc. 2a	
	MTX 10a	MTX 8a (end)	Leuc. 8a	Leuc. 8a	Leuc. 8a	
		Cytar. 8a- 10a	Cytar. 8a- 10a			
			Leuc. 2p	Leuc. 2p	Leuc. 2p	
		Cytar. 8p- 10p	Cytar. 8p- 10p	Leuc. 8p	Leuc. 8p	
		Leuc. 8p	Leuc. 8p	Filgr. 8p	Filgr. 8a	Filgr. 8a
4	5	6	7	8	9	10





QUESTIONS?????