

# What's the Tea in Oncology?

## Clinical Pearls for the Non-Oncology Pharmacist

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# Disclosures

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- None

# Outline

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- Learning objectives
- Case #1
- Case #2
- Dispensary tips
- Useful resources



# Learning Objectives

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The learner should be able to:

- Understand relevant portions of oncologic progress notes
- Integrate oncologic considerations in patient assessment
- Describe oncologic factors considered when dose-reducing chemotherapy
- Understand rationale behind chemotherapy protocol deviations
- Access common resources for oncology drug information

# Case 1

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# Case 1: Patient LY

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## DIAGNOSIS:

- Stage IVB CD5-positive B-cell lymphoma with plasma cell differentiation as diagnosed on lymph node biopsy June 28. Immunohistochemistry showed CD20, CD5, BCL2 positive cells, but CD10, BCL6, and cyclin D1 were negative. Ki-67 was high and clinically behaving aggressively. FISH for translocation 11;14 as well as MYC were both negative. Stage IVB with moderately bulky diffuse adenopathy including splenomegaly measuring 18.7 cm and hepatomegaly measuring 20.5 cm; 40% bone marrow involvement as well. IPI score is 5.

## TREATMENT TO DATE:

- R-CHOP cycle #1 given July 9 following prednisone pre-phase.

## PAST MEDICAL HISTORY:

# Case 1: Patient LY

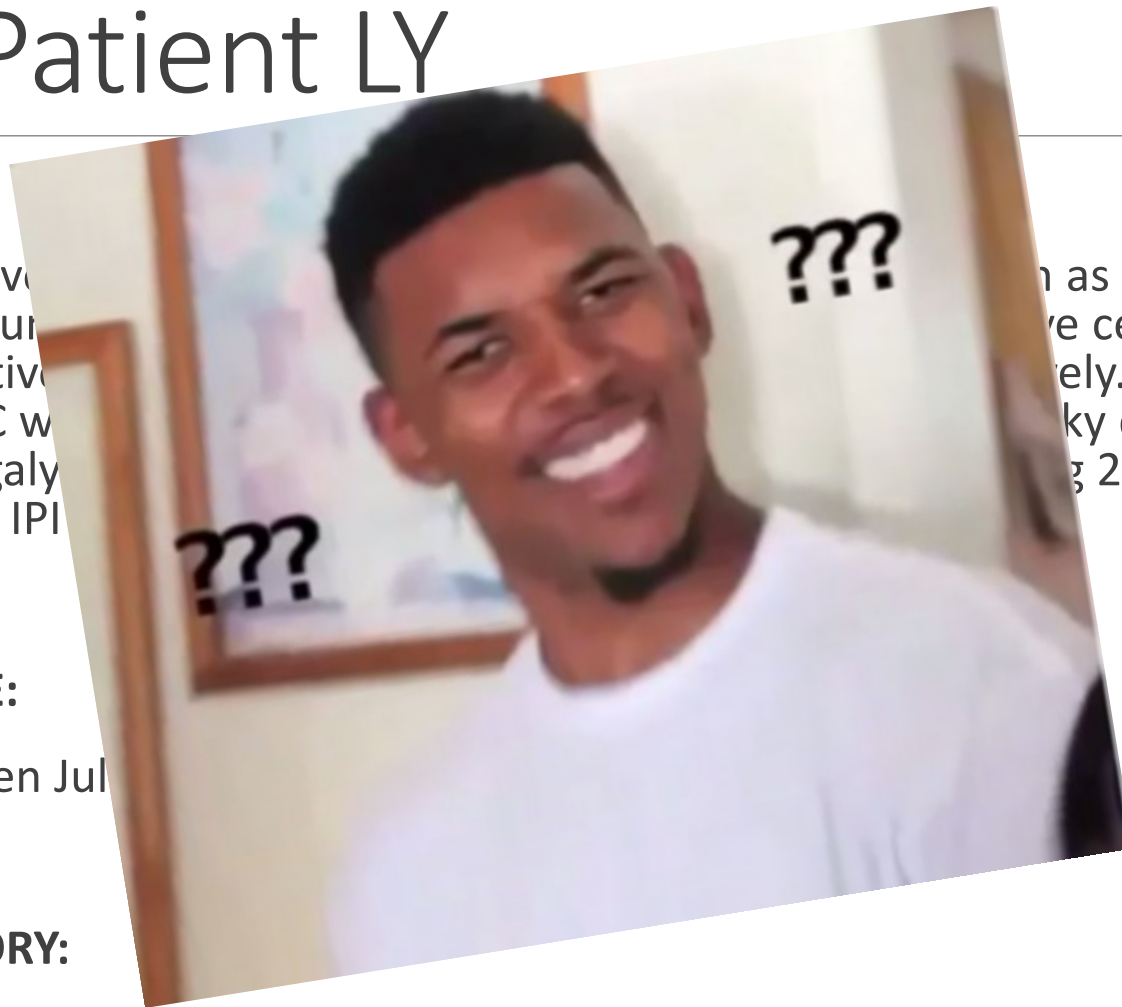
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## TREATMENT TO DATE:

- R-CHOP cycle #1 given July 15, 2014.

## PAST MEDICAL HISTORY:



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# Case 1: Patient LY

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**71 year-old male with Stage IVB CD-5 positive B-cell lymphoma presenting to emergency with fever on Cycle 1, Day 11 of R-CHOP.**

- Feeling generally unwell and progressively weak over past three days
- Shortness of breath and productive cough for past two days
- Increased urinary frequency for past two days
  - Dysuria starting today
- Subjective chills, temperature of 38.7°C at home

# Case 1: Patient LY

71 year-old male with **Stage IVB** CD-5 positive B-cell lymphoma, fever on Cycle 1, Day 11 of R-CHOP.

**Pearl #1: Stage IV is not always terminal/incurable!**

- Staging is used to provide details about the cancer

- Feeling generally unwell and progressively weak over past week
- Shortness of breath and productive cough for past two days
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# Case 1: Patient LY

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**Cycle 1, Day 11**

- Feeling generally unwell and progressively weak over past week
- Shortness of breath and productive cough for past two days
- Increased urinary frequency
  - Dysuria starting today
- Subjective chills, temperature 38.5°C

## **Pearl #2: Where the patient is in their cycle is important**

- Guides symptom assessment
  - Adverse effects occur at different points in a cycle
- Informs expected neutrophil/platelet counts
  - High infection risk during neutrophil nadir

# Case 1: Patient LY

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<b>Medical history</b>	Recently diagnosed CD-5 positive B-cell lymphoma <ul style="list-style-type: none"><li>• First cycle of R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisone) started 11 days ago</li></ul>
<b>Allergies/intolerances</b>	No known drug allergies
<b>Medications</b>	No regular home medications <ul style="list-style-type: none"><li>• Received G-CSF on days 8 – 10 of R-CHOP</li></ul>
<b>Social history</b>	Lives at home, wife is caregiver  Denies tobacco, alcohol, or recreational drug use

# Case 1: Patient LY

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## Relevant investigations

Hemoglobin	107 g/L (120 – 160)
WBC	0.3 x 10 <sup>9</sup> /L (4 – 11)
Neutrophils	Not available (2 – 9)
Platelets	96 x 10 <sup>9</sup> /L (150 – 400)
Serum creatinine	77 mcmol/L
Bilirubin	15 mcmol/L (< 21)
ALT	39 U/L (< 50)

Temperature	37.3°C
Blood pressure	105/80 mmHg
Heart rate	120 BPM
O2 saturation	94% on room air
Respiratory rate	18 RPM
Chest x-ray	<b>Pending</b>
Blood culture	<b>Pending</b>
Urine culture	<b>Pending</b>

# Case 1: Patient IV

Relevant in

Hemoglobin  
WBC  
Neutrophils  
Platelets

Serum creatinine

Bilirubin  
ALT

**FEBRILE**



**NEUTROPENIA**



**FEBRILE NEUTROPENIA**



imgflip.com

Hg

n air



# Febrile Neutropenia

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## Optimal Management of Neutropenic Fever in Patients With Cancer

Andrea J. Zimmer, MD<sup>1</sup> and Alison G. Freifeld, MD<sup>1</sup>

Febrile neutropenia remains an important complication of treatment with cytotoxic chemotherapy. It is often the first and sometimes the only sign or symptom of infection in this vulnerable patient population. Urgent and appropriate evaluation and treatment are imperative because delay in initiating appropriate antibiotic therapy may be life threatening. Selection of antibiotics should be based on the patient's symptoms, previous culture data, and institutional antibiograms. Ongoing therapy should be guided by culture and clinical data. Antimicrobial resistance is of great concern, particularly in this population, so careful attention to antibiotic selection and duration is needed.

**J Oncol Pract 15:19-24. © 2019 by American Society of Clinical Oncology**

# Febrile Neutropenia

## Pearl #3: Febrile neutropenia is a medical emergency

- Ensure antibiotic choice provides Pseudomonas coverage
- Infection history is important

## Optimal Management of Neutropenic Fever in Patients With Cancer

MD<sup>1</sup>

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# Case 2

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# Case 2: Patient KT

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62 year old female with ISS Stage III IgGK multiple myeloma (MM)

- Treated with CyBorD, autologous stem cell transplant, and VRd in 2016
  - Rd maintenance 2017 – 2019, discontinued due to neuropathy
- Lost to follow-up after 2019
  
- No other significant medical, family, or social history

**CyBorD** = cyclophosphamide, bortezomib, dexamethasone

**Autologous stem cell transplant** involves high dose chemotherapy followed by stem cell rescue

**VRd** = bortezomib (Velcade), lenalidomide (Revlimid), dexamethasone

# Case 2: Patient KT

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Presented to emergency with:

- Confusion
- Weakness
- Low back pain
- Bilateral leg pain
- Abdominal pain

# Case 2: Patient KT

## Relevant laboratory values

July 28, 2021		July 29, 2021	
Creatinine	240 $\mu\text{mol/L}$	Free Kappa light chains	5714.6 $\text{mg/L}$ (3.3 – 19.4)
Creatinine clearance	15 $\text{ml/min}$	Free Lambda light chains	6.2 $\text{mg/L}$ (5.7 – 26.3)
Calcium	2.95 $\text{mmol/L}$ (2.1 – 2.6)	Free Kappa/Lambda	921.71 (0.26 – 1.65)
Albumin	20 $\text{g/L}$ (30 – 45)		
Calcium (corrected)	3.35 $\text{mmol/L}$		
Hemoglobin	44 $\text{g/L}$ (120 – 160)		
WBC	$6.3 \times 10^9/\text{L}$ (4 – 11)		
Neutrophils	$3 \times 10^9/\text{L}$ (2 – 9)		
Platelets	$103 \times 10^9/\text{L}$ (150 – 400)		
Liver enzymes	Within normal limits		
Total protein	188 $\text{g/L}$ (63 – 80)		

### CRAB symptoms:

- Calcium (elevated)
- Renal failure
- Anemia
- Bone lesions



# Case 2: Patient KT

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Patient to start cycle 1 of **DRd** chemotherapy (28-day cycle)

- Daratumumab IV Days 1, 8, 15, 22
- Lenalidomide (Revlimid<sup>®</sup>) PO Days 1 – 21
- Dexamethasone PO Days 1, 8, 15, 22

# Case 2: Patient KT

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- Daratumumab IV Days 1, 8, 15, 22
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**Pearl #4: Lenalidomide is only available through RevAid®, a controlled distribution program.**

- Liaise with patient or local cancer centre regarding supply while admitted



# Case 2: Patient KT

Patient to start cycle 1 of **DRd** chemotherapy (28-day cycle)

- Daratumumab 16 mg/kg IV on Days 1, 8, 15, 22
- Lenalidomide **10 mg PO daily** Days 1 – 21
- Dexamethasone 40 mg PO on Days 1, 8, 15, 22

## Renal dysfunction

Estimated GFR (eGFR)* or Creatinine clearance (mL/min)	Lenalidomide Dose
greater than or equal to 60	25 mg daily†
30 to less than 60	10 mg daily††
less than 30, not requiring dialysis	15 mg every other day for 21 days, then rest for 7 days (i.e. 28-day cycle)
less than 30, dialysis dependent	5 mg daily† (administer after dialysis on dialysis day)

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**Pearl #5: Cause of organ dysfunction is important when determining dose reductions.**

- Cancer itself often causes organ dysfunction
- Treating the cancer can help resolve this dysfunction

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## Renal dysfunction

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less than 30, dialysis dependent	(administer after dialysis on dialysis day)

**Pearl #6: Risk of under treating must be balanced with risk of increased toxicities**

- Type and severity of toxicity can also affect dose reductions.



# Case 2: Patient KT

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**Per hematologist: give lenalidomide 10 mg PO daily Days 1 – 21**

- Aggressive nature of disease
- Neutropenia with lenalidomide is reversible and not cumulative
  - Dose can be further adjusted mid-cycle

# The Dispensary Side

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# General Screening Procedure

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1. Confirm diagnosis
2. Confirm and obtain protocol
3. Check formulary eligibility
4. Review treatment parameters and start date
5. Screen orders against protocol for:
  - a. Scheduling
  - b. Dosing
  - c. Pre-medications
  - d. Supportive medications
6. Check allergies, drug interactions, organ function

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**Pearl #7: Protocols often have neutrophil and platelet parameters.**

- To ensure neutrophil and platelet recovery prior to starting next cycle



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**Pearl #8: Remember supportive medications.**

- Pre-medications used to prevent reactions to certain treatments
- Other supportive medications commonly used for prophylaxis or management of adverse effects



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# Common Clarifications

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- Protocol deviations
  - Scheduling
  - Dose reductions
  - Drug omissions
- Drug interactions
- Renal/hepatic dose adjustments
- Pre-medications
- Supportive care

# Common Clarifications

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- Protocol deviations

- Scheduling

- Dose reductions

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- Drug interactions

- Renal/hepatic dose adjustments

- Pre-medications

- Supportive care

**Pearl #9: Protocol deviations can occur in the absence of drug interactions or organ dysfunction.**

- Protocols often modified for previous toxicity or patient condition

# Useful Resources

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## **Local chemotherapy protocol databases**

BC Cancer Agency

- Chemotherapy Protocols
- Drug Index

Ontario Cancer Care

American Society of Clinical Oncology (ASCO)

Multinational Association of Supportive Care in Cancer (MASCC)

Alberta Health Services Cancer Guidelines

# Questions?

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# References

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