Many Options, So Little Time psed/Refractory Diffuse Large B-Cell Lymphoma
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I have nothing to disclose. I $\ensuremath{\textit{will}}$ $\ensuremath{\textit{not}}$ be discussing off-label indications.

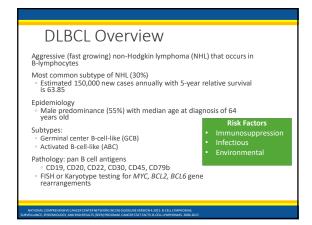
Objectives

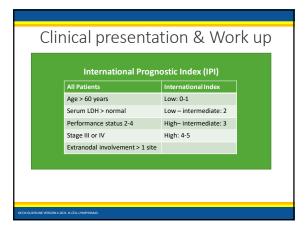
Review epidemiology, risk factors, and pathophysiology of diffuse large B-cell lymphoma (DLBCL) $\,$

Describe treatment approaches of relapsed/refractory DLBCL

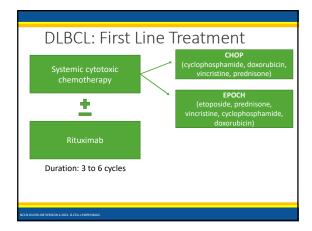
Discuss the role of novel agents for the treatment of relapsed/refractory DLBCL

Develop a proposed treatment algorithm based on key primary literature



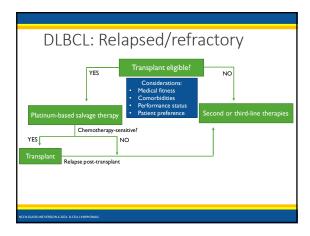


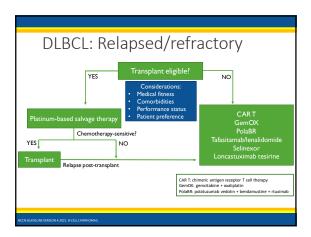
Audience Response Which of the following is not a CD (cell surface) marker of DLBCL? A. CD 20 B. CD 30 C. CD 45 D. CD 79b E. CD 80

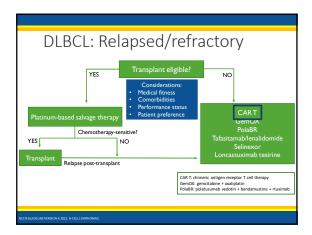


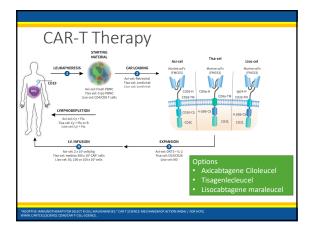
Approximately 30-40% of patients will experience relapsed/refractory (R/R) disease Relapsed: disease recurrence after achievement of complete response (CR) Approximately 10% Refractory: failure to respond to therapy Approximately 20% Treatment goal? Cure

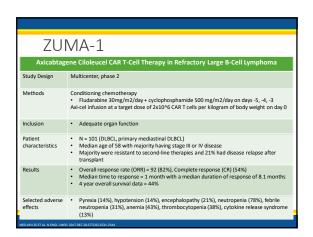
Autologous hematopoietic stem cell transplant Requires chemotherapy-sensitive disease Give up to a total of 6 cycles to reach complete response (CR) Once CR is achieved, proceed to autologous hematopoietic stem cell transplant (aHCT) Selected salvage regimens DHAP (dexamethasone, cisplatin, cytarabine) ± rituximab Myelosuppression, nausea/emesis, dermatologic changes Supportive care: high emetogenecity, hydration, artificial tears and steroid eye drops ICE (ifosfamide, carboplatin, etoposide) ± rituximab Myelosuppression, hemorrhagic cystitis, hepatotoxicity, nephrotoxicity, neurotoxicity Supportive care: high emetogenecity, hydration, mesna, growth factor

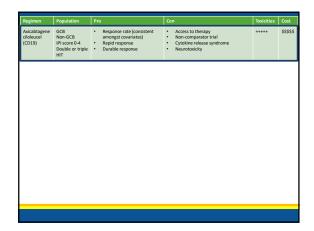


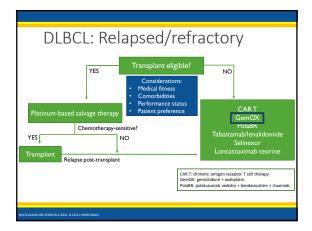






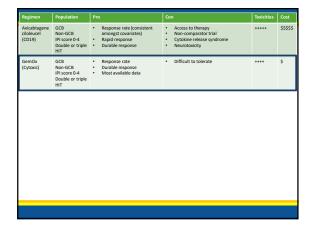


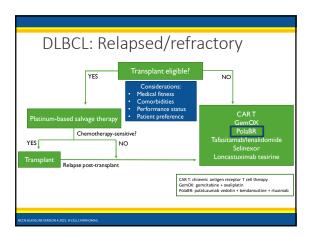


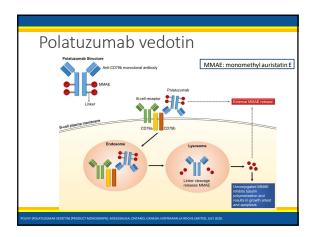


Dose Gemcitabine 1000 mg/m2, Oxaliplatin 100 mg/m2, ± Rituximab 375 mg/m2 Repeat cycle every 21 days for a total of 6-8 cycles Renal: If CrCl < 30mL/min, reduce initial dose of oxaliplatin Hepatic: none Grade 3-4 adverse events: Anemia (10%), neutropenia (43-73%), thrombocytopenia (26-44%), neuropathy (7%) Other adverse events: nausea/emesis (52-100%)

Patient characteristics Median age was 67 years old with a median of 1.8 prior lines of therapy Prophylaxis No use of prophylactic growth factors Multiple studies demonstrate response ORR = 43-78%, CR = 34-50%, PR = 17% Overall survival (OS) 13.9-41% and 5-year progression-free survival (PFS) 12.8-29%







Polatuzumab vedotin Dose Polatuzumab vedotin 1.8 mg/kg intravenously once every 21 days in combination with bendamustine 90 mg/m2 and rituximab 375 mg/m2 Administer for a maximum of 6 cycles Renal adjustments: none Hepatic adjustments: avoid use with AST/ALT >2.5x ULN or total bilirubin > 1.5x ULN Grade 3-4 adverse events Neutropenia (66%), thrombocytopenia (56%), anemia (24%), lymphoctyopenia (22%), febrile neutropenia (15%), peripheral neuropathy (2%) Other notable adverse events Diarrhea (38%), increase AST (36%), increase ALT (38%), increase serum creatinine (87%), pneumonia (22%) Drug-Drug Interactions: minor substrate of CYP3A4

	zumab vedotin plus bendamustine and rituximab in ed/refractory DLBCL
Study Design	Multicenter, open-label, phase lb/ll trial
Methods	Bendamustine with rituximab or obintuzumab ± Polutuzumab vedotin (BR, PolaBR)
Inclusion	ECOG 0-2 Baseline grade ≤ 1 peripheral neuropathy Transplant ineligible
Patient characteristics	Nedian age of 67 and 71 (Pola-BR group, BR group) Algority of patients with IPI score of 3-5 having received 1-3 lines of previous therapy
Results (PolaBR vs BR)	 ORR = 28 (70%) vs 13 (32.5%), CR = 23 (57.5%) vs 8 (20%), PR = 5 (12.5%) vs 5 (12.5%) Median duration of response = 10.3 months vs 4.1 months OS = 12.4 months (PolaBR) vs 4.7 months (BR)
Selected adverse events (PolaBR vs BR)	 Grade 3/4: anemia (28% vs 18%), <u>neutropenia</u> (46% vs 33%), thrombocytopenia (41% vs 23%), <u>lymphopenia</u> (13% vs 0%), <u>febrile neutropenia</u> (10% vs 13%), <u>infections</u> (23% vs 21%) <u>Diarrhea</u> (13% vs 28%), <u>constipation</u> (18% vs 21%), <u>peripheral neuropathy</u> (44% vs 8%)

Polatuzumab vedotin plus bendamustine and rituximab in relapsed/refractory DLBCL

Limitations

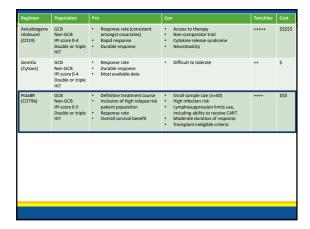
- Small sample size
- Confounded by addition of novel agent to historical treatment regimen
- 31% of patients discontinued all treatment due to toxicities

Clinical Pearls
- Due to high risk of infection, prophylaxis for Pneumocystis Jivroveci and Herpesvirus must be administered
- Consider use of prophylaxidig raprulocyte colony-stimulating factors

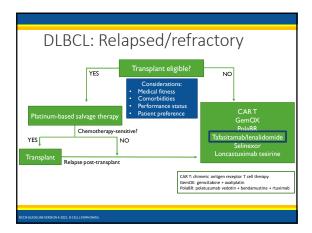
Author conclusion

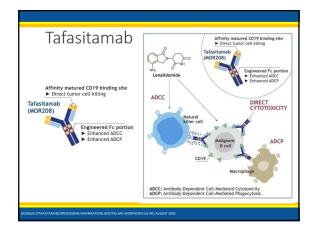
PolaBR resulted in statistically significant improvement in CR, ORR, and PFS compared with BR

Reviewer conclusions
- PolaBR has demonstrated response in R/R DLBCL, including high-risk subgroups
- Higher rates of grade 3/4 myelosuppression than with BR alone
- The toxicity profile of PolaBR impacts utilization



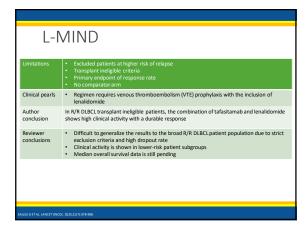
Audience Response Which prophylaxis is required when starting patients on treatment with polatuzumab vedotin? A. Sulfamethoxazole-trimethoprim B. Acyclovir C. Granulocyte-colony stimulating factor (G-CSF) D. A & B E. All of the above

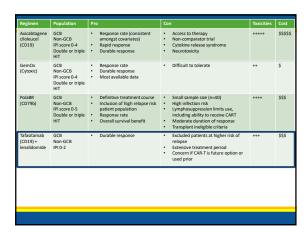




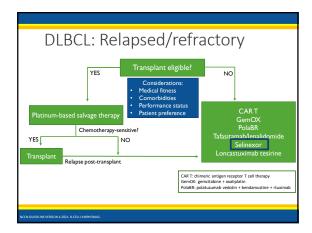
Tafasitamab Dose * Tafasitamab 12 mg/kg intravenously in combination with oral lenalidomide 25 mg on days 1-21 of each 28-day cycle * Administer for a maximum of 12 cycles, followed by tafasitamab monotherapy indefinitely * Renal adjustments: none * Hepatic adjustments: none Selected grade 3/4 adverse events * Anemia (7%), febrile neutropenia (12%), neutropenia (50%), prolonged partial thromboplastin time (4%), thrombocytopenia 118%) Other notable adverse events * Peripheral edema (24%), increase glucose (49%), increase uric acid (20%), diarrhea (36%), infection (73%) Drug-Drug Interactions: none

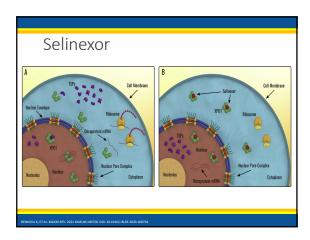
Study Design	International multi-center, open-label, single-arm, phase 2
Methods	Tafasitamab (weekly) in combination with lenalidomide (on days 1-21) for up to 12 cycles followed by tafasitamab monotherapy
Inclusion	Transplant ineligible
Exclusion	Double or triple-hit lymphoma, primary refractory DLBCL Previous treatment with CD19 therapy (including CART)
Patient characteristics	 N = 80 Median age of 72 years old with majority being an ECOG 0-1 and 1-2 previous lines of therapy
Results	 ORR = 48 (60%), CR = 34 (43%), PR = 14 (18%) Median duration of response = 21.7 months
Selected adverse events	 Grade 3/4: Neutropenia (48%), thrombocytopenia (17%), febrile neutropenia (12%), hypokalemia (6%), pneumonia (6%), pulmonary embolism (4%) Diarrhea (33%), rash (36%)

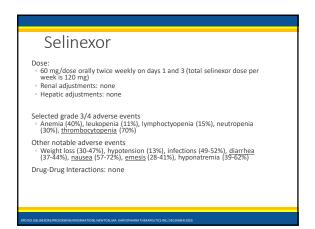


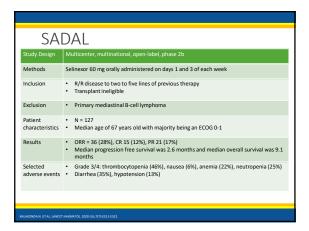


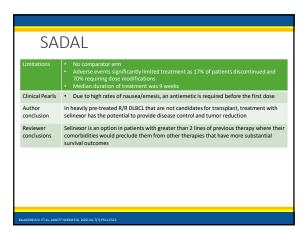
Audience Response What is the dose limiting toxicity of using tafasitamab/lenalidomide? A. Hepatotoxicity B. Infection C. Nausea and vomiting D. Neutropenia E. Renal impairment

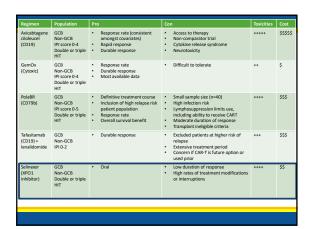


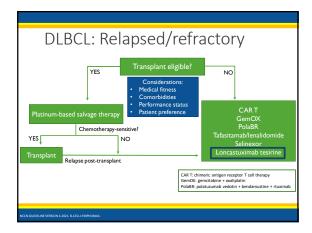


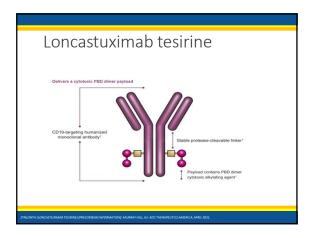




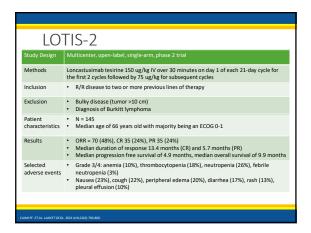


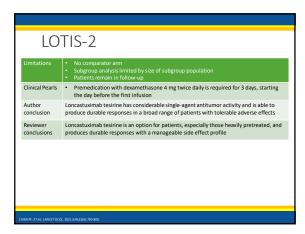




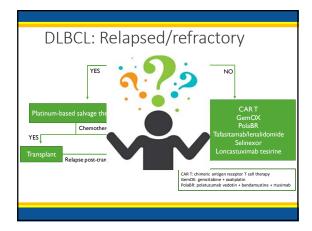


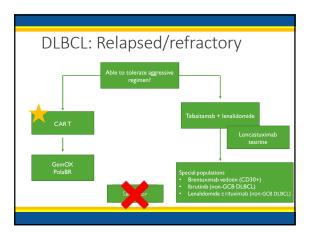
Loncastuximab tesirine Dose: • 0.15 mg/kg IV on day 1 every 3weeks for 2 cycles, followed by 0.075 mg/kg IV on day 1 every 3 weeks until disease progression or toxicity • Renal adjustments: none • Hepatic adjustments: none Selected grade 3/4 adverse events • Anemia (12%), neutropenia (32%), thrombocytopenia (20%), peripheral edema (3%), ascites (3%) Other notable adverse events • Edema (28%), skin rash (30%), increased serum glucose (48%), increased AST (41%), ALT (34%), muscloskeletal pain (23%), nausea (23%), diarrhea (17%) Drug-Drug Interactions: CYP3A4 (minor substrate), P-glycoprotein (minor substrate)

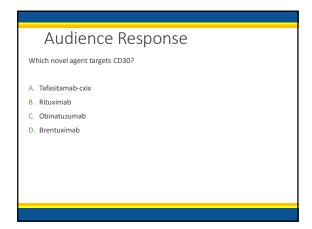




Regimen	Population	Pro	Con	Toxicities	Cost
Axicabtagene ciloleucel (CD19)	GCB Non-GCB IPI score 0-4 Double or triple HIT	Response rate (consistent amongst covariates) Rapid response Durable response	Access to therapy Non-comparator trial Cytokine release syndrome Neurotoxicity	*****	\$\$\$\$\$
GemOx (Cytoxic)	GCB Non-GCB IPI score 0-4 Double or triple HIT	Response rate Durable response Most available data	Difficult to tolerate	**	\$
PolaBR (CD79b)	GCB Non-GCB IPI score 0-5 Double or triple HIT	Definitive treatment course Inclusion of high relapse risk patient population Response rate Overall survival benefit	Small sample size (n=40) High infection risk Lymphosuppression limits use, including ability to receive CART Moderate duration of response Transplant ineligible criteria	****	\$\$\$
Tafasitamab (CD19) + lenalidomide	GCB Non-GCB IPI 0-2	Durable response	Excluded patients at higher risk of relapse Extensive treatment period Concern if CAR-T is future option or used prior	***	\$\$\$
Selinexor (XPO1 inhibitor)	GCB Non-GCB Double or triple HIT	• Oral	Low duration of response High rates of treatment modifications or interruptions	****	\$\$
Loncastuximab tesirine (CD19)	GCB Non-GCB Double or triple HIT	Response rate Inclusion criteria Dosing schedule	Small subgroup samples Durability of response Concern if CAR-T is future option or used prior	**	sss







Key Points

DLBCL is an aggressive form of NHL in which approximately 50% of patients will relapse or have refractory disease

The preferred option for patients that have access and can tolerate aggressive treatment is an aHCT $\,$

Subsequent options for R/R DLBCL are fragmented and lack a standard of care $% \left(1\right) =\left(1\right) \left(1\right$

Second and third-line therapies are selected based on limited data and patient specific factors

Future options are growing for treatment of R/R DLBCL

Future Directions

- CAR T therapy with universal
- · Antibody-drug conjugates
- · Bispecific T-cell antibodies
- · Blinatumomab (CD19-CD3)
- Mosunetuzumab (CD20-CD3) Glofitamab (CD20-CD3)
- · Odronextamab (CD20-CD3)
- · Epcoritamab (CD20-CD3)
- · Checkpoint inhibitor
- · Nivolumab (PD-1)
- Magrolimab (CD47)
- BL2-inhibitor
- Venetoclax
- $^{\circ} \ \textbf{Epigenetic modifier}$
- · Tazemetostat (EZH2)

So Many Options, So Little Time

Relapsed/Refractory Diffuse Large B-Cell Lymphoma

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	rophylaxis Indications	
Prognostic Model: I		
Age > 60 years	Low risk: 0-1	
Serum LDH > normal	Intermediate risk: 2-3	
Performance status > 1		
Stage III or IV	High risk: 4-6 or kidney or adrenal gland involement	
Extranodal involvement > 1 site		
Kidney or adrenal gland involvement		
Additional indications for CNS proph Independent of risk score HIV-associated lymphoma Testicular lymphoma High-grade B-cell lymphom BLC2 and/or BCL6 Primary cutaneous DLBCL, Stage IE DLBCL of the breas	nas with translocations of MYC and	