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Disclosure Summary

Role	Relationship	Company/ies
Advisory Board	Advisor	Gilead-Kite, BMS-Juno, Miltenyi Biomedicine, Lilly Oncology, Incyte, Abbvie, Cargo, Beigene, Kite, Allogene, Astrazeneca, Genentech, Ipsen, and Galapagos
Research Funding	Researcher	Miltenyi Biotec, Lilly Oncology, Genentech
Scientific Advisory Board	Founder	Tundra Therapeutics



Bispecific antibodies: Ready or not here we come!

- T-cell engagers/bispecific antibodies bind two different antigens most commonly a cancer cell antigen and CD3 on T-cells
- Upon crosslinking, effector T cells kill target cancer cells and release cytokines with a risk profile similar to CAR-T cell therapy
- First approved T-cell engager was Blinatumomab in 2014 which has revolutionized the management of B-cell ALL





Clinical Development



>200 bispecific antibody
treatments under development
with the majority being for solid
malignancies while to date most
approval are in hematological
malignancies



T cell Engagers in B-cell NHL



- TCE in lymphoma dominated by CD20xCD3 bispecific antibodies
 - Powerful immunotherapeutic agents even in relapsed, refractory setting.
- Offers an immunotherapeutic approach similar to CAR-T without gene modification

From Third Line \rightarrow First Line

- Epcoritamab, Glofitimab approved in Third Line DLBCL
- Mosunetuzumab, Epcoritamab approved in Third line FL
- Ondronextamab approved in Europe for FL and DLBCL in third-line setting

Second line Clinical Trials

- STARGLO
- ECPOR NHL-2 Trial



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Epcoritamab

- Phase I/II trial in R/R DLBCL
- Failed minimum two prior lines of therapy
- prior CAR T-cell exposure=39%
- Median 3 prior lines, range 2-11
- Step-up dosing, given subcutaneously.
- Safety
 - CRS Grade 1-2 ~50%, Grade 3+ 2.5%
 - ICANS Grade 1-2 6.5%, Grade 3+ 0.6%





Outcomes

ORR=63%, CR=39%

- ORR for Prior CAR-T=54%
- ORR for CAR naïve=69%
- Limited follow-up, median DOR=12 months
- DOR of CR patients not reached
- ? Is this curative



Long-term Outcomes

- 24-month PFS for Epcoritamab is 27.8% and OS is 44.6% for the entire population
 - Of the 40.1% of patients who achieved a CR to epcoritamab; ~65% remained in CR at 24 months
 - 119 patients were MRD evaluable,45% were MRD negative whichcorrelated with improved PFS





Glofitamab

- Glofitamab is a CD20xCD3 bispecific T-cell engage with a 2:1 configuration enabling bivalent binding to CD20 improving targeteffector cell binding.
- Obinutuzumab 1000 mg given 7 days prior to deplete peripheral and tissue-based Bcells to mitigate severe CRS





Glofitamab Outcomes

154 pts treated, median age 66, median 3 prior lines of therapy

- 33% received prior CAR T-cell therapy
- ORR=52%, CR=39% for all patients
- Among complete responders, 78% remained in CR at month 12
- Prior CAR-T CR rate 35% vs 42% no prior CAR)

Safety

- CRS=97%, almost all grade 1-2
- ICANS=8%, again mostly grade 1-2
- Eight grade 5 events, mostly due to infections









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STAR-GLO STUDY



63% in both arms had 1 prior line of therapy

51% in R-GemOx, 58% Glofit-GemOx arms were primary refractory disease

<10% of patients with prior CAR T

Overall Survival Benefit

Median overall survival was significantly improved NR versus 9 months with 11.3 months follow-up

Most common reason for discontinuation in both groups was disease progression





PFS and Toxicities

Median PFS of 13.8 months versus 3.6 months with R-GemOx

Toxicities

- Grade 3+ CRS in 2% of patients
- Grade 2+ Neurologic events in 31% of patients
- Non-relapse mortality of 8% in Glofit arm versus 5%, largely driven by infectious complications





EPCORE-NHL

- Epcoritamab + Gem/Ox for second-line and ASCT ineligible patients
- R/R large cell lymphoma ≥ 1 line of therapy
- Gem/Ox x 8 cycles with Epcoritamab on Days 1, 8 (stepup) and full dose on day 15

Treatment regimen: Epcoritamab SC 48 mg + GemOx IV							
Agent	C1	C2	C3	C4	C5–9	C10+	
Epcoritamab	QW	QW	QW	Q2W	Q2W	Q4W	
Gemcitabine	0.211/						
Oxaliplatin	Q2W						



Outcomes

ORR of 85% CR rate of 61%

Median time to response was 1.5 months

Median PFS was 11.2 months for all patients and 26.7 months for patients who achieved a CR

Median OS was 21.6 months



	IRC assessment N = 103	Investigator assessment N = 103
Overall response rate, n (%)	88 (85.4)	82 (79.6)
CR	63 (61.2)	60 (58.3)
PR	25 (24.3)	22 (21.4)
Stable disease, n (%)	3 (2.9)	7 (6.8)
Progressive disease, n (%)	8 (7.8)	9 (8.7)
Not evaluable, n (%)	4 (3.9)	5 (4.9)
Time to response, months, median (range)	1.5 (0.9–3.0)	1.5 (0.9–11.1)
Time to CR, months, median (range)	2.6 (1.3–22.1)	1.7 (1.3–10.7)



Toxicities

- CRS in 52% (all low grade), 1 patient with high grade CRS.
- Tocilizumab administered in 23% of patients
- Grade 3+ Infectious complications in 29% of patients, largely driven by COVID19 complications





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Front-Line Studies

SKYGLO

- Pola-R-CHP vs Glofit-Pola-R-CHP

EPCORE

- R-CHOP vs Epcor-R-CHOP

Olympia

Results of these frontline studies may establish a new standard of care in DLBCL

- R-CHOP vs Ondronextamab+CHOP



Coming soon to a hospital near you!

AZD0486 is a novel IgG4 fully-human CD19xCD3 T cell engager currently being evaluated in clinical trials

- Administered with step-up dosing protocol
- 60% of patients had prior CAR-T
- Among 40 patients who received doses≥2.4 mg, the ORR was 47% with CR rate of 42%



Case Study

55-year-old female with DLBCL, non-GCB phenotype

Treatment History:

- DA-EPOCH x 6 (April-August 2020), PR
- R-GDP x 2 (Dec 2020- Jan 2021), PD
- Polatuzumab-Rituximab x1 (Feb 2021), PD
- Tisagenlecleucel (CART) after Bendamustine LD, Progression
- Pembrolizumab x 3 (April-June 2021), mixed response
- EBRT 50.4 Gy in 28 fractions to mediastinal and neck disease, July-Aug 2021, CR-> PD within 4 months
- PET/CT (upper image): New renal mass, biopsy proven DLBCL
- Started AZD0486; achieved MRD negative CR (lower image), proceeded with allogeneic stem cell transplant, no relapse +3 years







BAFF Bispecific Antibody

LY4152199 BAFF redirected bispecific antibody under development

No data to date, but BAFF CAR-T has shown efficacy in early phase clinical trils



Conclusions

- T-cell engagers have revolutionized the management of B-cell malignancies and are currently utilized in the 3+ line of therapy
- Second line approvals are pending, and frontline studies are ongoing and may change our upfront approach
- New targets, CD19, BAFF, CD22 are under investigation and will offer more therapeutic options for our patients



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Thanks!





Froedtert & MEDIC



