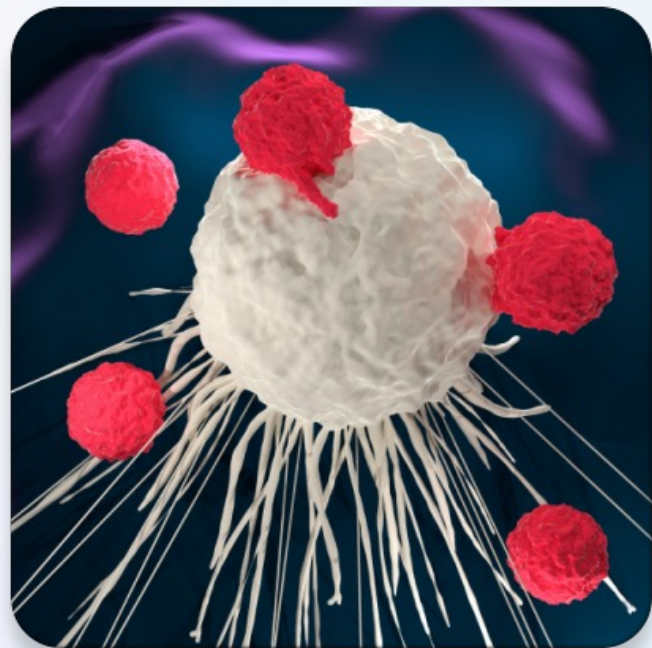


Background

- Chimeric Antigen T cells (CAR-T) therapy is an innovative treatment in Cellular Therapy for patients with hematologic malignancies.
- Most common side effects of CAR-T therapy include cytokine release syndrome (CRS) and immune effector cell associated neurotoxicity (ICANS).
- Variations in identification and grading of CRS/ICANS amongst healthcare providers can impact overall severity and patient outcomes.

Methods

- Healthcare professional (HCP) participated in a simulation with an in-service on the CARTOX™ app then implemented the CARTOX™ into practice.
 - 6 simulations total; 2 canceled.
 - 3 simulations in the infusion center
 - 3 simulations in the inpatient unit
- Conducted pre and post EMR review evaluating recognition, grading and timeliness to intervention.
- EMR note template created to use in documentation for trained HCP on CARTOX™ app.



Results / Discussion

Recognition

Presenting symptom	Pre-Sim % (n=17)	Post-Sim % (n=6)
Fever (CRS)	76% (n=13)	83% (n=5)
AMS (ICANS)	12% (n=2)	0% (n=0)
None (no toxicity)	12% (n=2)	17% (n=1)

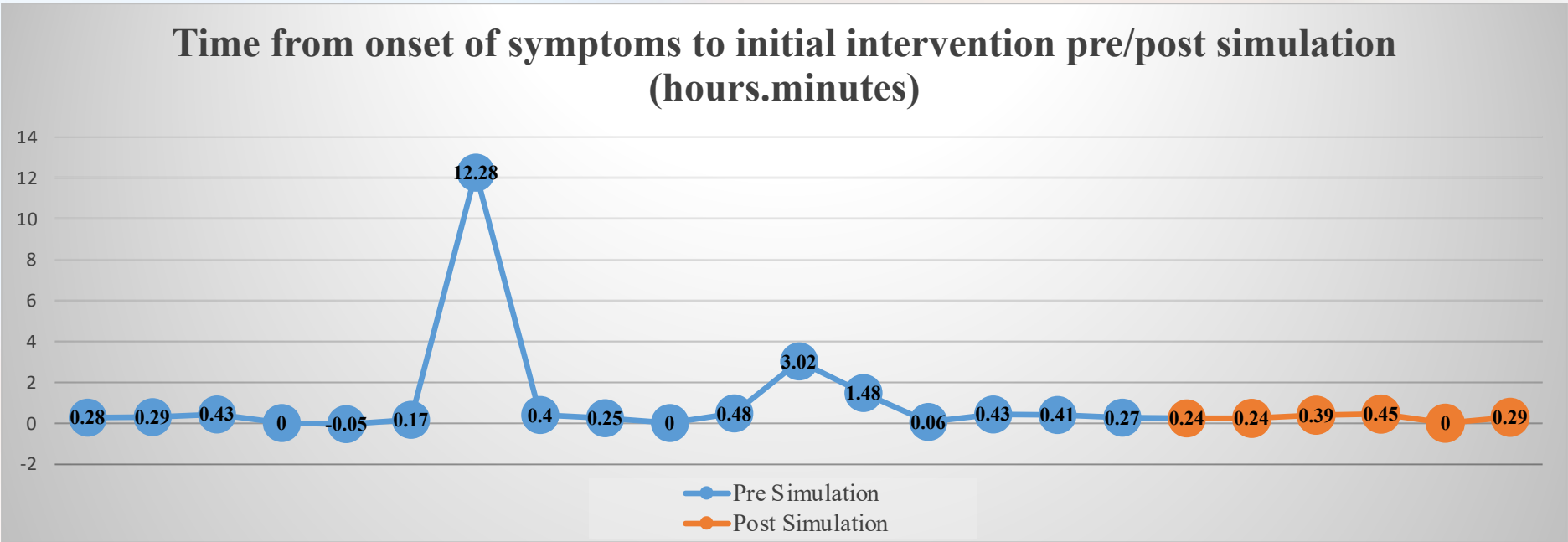
*100% of cases that presented with fever, a neutropenic fever work up was initiated along with supportive care.

Grading

Grading	Pre-Sim % (n=17)	Post-Sim % (n=6)
Grade 1→2	38% (n=5)	83% (n=5)
Grade 1-2→3-4	8% (N=1)	20% (n=1)
CRS→ICANS	65% (n=11)	80% (n=4)

*Grading was accurate throughout both the pre and post EMR review. The toxicity grading was validated and verified by the Primary Investigator (PI) using the ASTCT consensus grading and the CARTOX™ app.

Timeliness to Intervention



	Pre Simulation	Post Simulation
Average	1.35	0.32
Median	0.40	0.29
Min	0.00	0.24
Max	12.28	0.45

*34% improvement from pre-simulation

Limitations

- Organizational changes
 - Changing of paging system for RNs
 - Personal cellphone use rules
 - Staffing shortage
- Availability of HCP
- Healthcare culture

Conclusion

- Simulation combined with CARTOX™ is effective for improving recognition, grading and timeliness of intervention.
- There was a 34% improvement from time of toxicity onset to intervention post-simulation with intervention within 45 minutes of onset, lower than national benchmark of 60 minutes.

References

