

**Title:**

Treatment Options for Chronic Lymphocytic Leukemia Tumors Chimeric Antigen Receptor Modified T Cells Therapy (CART-19)

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**Session Title:**

Research Poster Session 3

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 9:45 AM-10:15 AM

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 12:00 PM-1:15 PM

**Slot (superslotted):**

RSC PST 3: Sunday, 30 July 2017: 2:00 PM-2:30 PM

**Keywords:**

Chimeric Antigen Receptor T-cells therapy (CART-19), Chronic Lymphocytic Leukemia and Cytokine Release Syndrome

**References:**

D Porter. (2013, December 2) . CART Therapy for CLL. Retrieved from:

[https://www.youtube.com/watch?feature=player\\_detailpage&v=nIMh9ieG58E](https://www.youtube.com/watch?feature=player_detailpage&v=nIMh9ieG58E)

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Jean, G.W.. & Comeau, J.M. (2015). Role of obinutuzumab in the treatment of chronic lymphocytic leukemia. *American Journal Of Health- System Pharmacy*, 72(11), 933-942. doi:10.2146/ajhp140282

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National Cancer Institute (2016). Chronic Lymphocytic Leukemia. Retrieved October 7, 2016 from: <https://www.cancer.gov/publications/dictionaries/cancer-terms?cdrid=346545>

**Abstract Summary:**

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**Learning Activity:**

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
The learner will be ale to gain understanding of CART-19 therapy as a treatment option for Chronic Lymphocytic leukemia (CLL) patient.	The objective will be met by learner verbally identifying this treatment option as being available in the United States as a clinical trail.

The learner will be able to identify possible side effects from CART-19 therapy.	The objective will be met by learner identifying at least one side effect of CART-19 therapy.
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**Abstract Text:**

**Purpose:**

The National Cancer Institute (2016) estimates that there will be eighteen thousand, nine hundred and sixty thousand new cases of Chronic Lymphocytic Leukemia (CLL) in 2016. With the survival rate of only five years, there is a need for new and improved treatment options with sustained remissions and improved patient outcomes (National Cancer Institute, 2016).

The purpose of this presentation is to increase nursing awareness of a new treatment option available for Chronic Lymphocytic Leukemia (CLL) patients. In 2010, a new treatment module was developed for CLL patients with the goal of sustained remissions. This new treatment option called: Chimeric Antigen Receptor T-cells therapy (CART-19) are laboratory created T-cells (white blood cells) that have the ability to target the CD19 antigens found on all B-cell malignant tumors (Porter, 2013). Currently, this treatment option is only received in a clinical trial; however, these patients can have serious adverse reactions causing them to seek management in the emergency department. There is a nursing knowledge and skill deficit related to this treatment option. Therefore, formal education is warranted in order to increase awareness and promote health literacy.

**Methods:**

A quantitative analysis of ten advance beginner oncology nurses was presented to determine their knowledge of CART-19 therapy as a treatment option for CLL patients. In mid November of 2016 a face to face in-service was developed. Several days before the start of the in-service participants were asked to complete a learning needs assessment tool (LNA). The LNA demonstrated a significant knowledge deficit related to newness of information and lack of exposure as evidenced by written deficiency in knowledge. The results of the LNA tool was used to developed an educational module that would educate both visual and auditory learning styles. The in-service included: a lecture, discussion outline, Likert style pre and posttest, PowerPoint presentation, instructor course evaluation, and time to process and ask questions. At the beginning of the in-service participants were also asked to complete a pretest. The purpose of the pre- test was to asses' current knowledge, to elicit participant's curiosity, measure written response, and determine if there were any knowledge gaps. After completion of the in-service, the participants completed a posttest that was identical to the pre-test. The purpose of the posttest was to measure learning and analyze the objectives with a goal that the learners would demonstrate an increase understanding of treatment options for CLL patients as evidenced by a score of seventy percent or greater on posttest and written assessments.

**Results:**

The mean pretest score of the nurses was 10%, with a range from 0-100%. The pretest statistical demonstrated a knowledge deficit related to, understanding, ability to manage, awareness, side effects, comfort level and antidote for patients undergoing CART-19 therapy. Subsequently, after the in-service the posttest showed an increase in overall knowledge by 70%. There was an increase in awareness and comfort level of caring for CART-19 therapy patients by 50- 60 %, and an additional 30% of the nurses were ability to identify the signs and symptoms of Cytokine Release Syndrome (CRS) and Tumor Lysis Syndrome (TLS) per written examine. The in-service ended with a course evaluation. The overall course rating was superb with a mean of 90%. The instructor was rated as excellent at 90% for effectiveness, which shows an obvious interest in subject matter and knowledge gained in all areas.

## **Conclusion:**

Chronic lymphocytic leukemia (CLL) is the most prevalent adult leukemia in the Western world (National Cancer Institute, 2016). Of the new cases, it is probable that over twenty-four thousand people will die from leukemia (National Cancer Institute, 2016). The gold standard for CLL treatment has been chemotherapy, radiation therapy, and stem cell transplant. However, the review of literature evidently demonstrates the need for increased treatment options and nursing education on managing patients undergoing CART-19 cell therapy for CLL. For this presentation, a CLL treatment option education was developed and applied in a magnet teaching hospital in Philadelphia. The course focused on the anatomy, physiology, etiology, mortality, morbidity, statistics, and current treatment options for CLL, as well as nursing management for patient post CART19 therapy patients. The workshop also included a PowerPoint presentation and course outline. The course was presented to ten advance beginner oncology nurses. Because this treatment is relatively new and still in the clinical trial phase, most patients are unaware of its existence. Equally, most nurses are also unaware of this treatment, therefore they are unable to share knowledge, or care for a patient who received this regimen. Hence, the goal to increase awareness was met as evidence by posttest results. Participants in the in-service verbalized increased feeling of edification, confidence and preparedness to care for post CART-19 therapy patients, with an increased probability of sharing the eligibility criteria to CLL patient seeking a clinical trial. The learning objectives and the LNA tool were effective to gauge test questions. The statistics showed a 70% increase in nursing knowledge. As a result of this presentation the author plans to turn this presentation into a manuscript and present this treatment option to nurses around the globe increasing awareness and promoting health literacy.