MATHEMATICAL MODEL OF CAR-T CELL THERAPY FOR GLIOBLASTOMA WITH THE LOGISTIC CANCER GROWTH WITH TIME DELAY

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I present an analysis of a mathematical model of CAR-T cell therapy in the treatment of glioblastoma multiforme with the logistic tumor growth focusing on the influence of time delay, based on [1].

CAR-T cell therapy involves injecting T cells modified for better recognition and detection of cancer cells. Based on many articles, mainly [5] and [3], the model was described using a system of differential equations.

First, I present the model and explain the meaning of each part of the equations. However, the main part of the poster is devoted to the analysis of steady states and their stability depending on time delay.

I briefly present the treatments we can include in our model and focus on the details of the best therapy for glioblastoma multiforme.

Based on the numerical simulations presented on the poster, I would like to show how time delay affects the solutions of our model. The range of values of parameters for our model was estimated from [2] and [4].

This model has the potential to optimize cancer treatment strategies. Conducting simulations allows to test various scenarios and identify optimal therapeutic strategies, such as adjusting drug doses, using combined therapies, or personalizing treatment based on individual patient factors.

References

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