عنوان مقاله:

Mathematical Model for Transmission Dynamics of Hepatitus C Virus with Optimal Control Strategies

محل انتشار:

مجله بین المللی مدل سازی و محاسبات ریاضی, دوره 9, شماره 3 (سال: 1398)

تعداد صفحات اصل مقاله: 25

نویسنده:

.Mamo Wameko - *Department of Mathematics, Wollega University, Nekemte, Ethiopia*

خلاصه مقاله:

An epidemic model with optimal control strategies was investigated for Hepatitus C Viral disease that can be transmitted through infected individuals. In this study, we used a deterministic compartmental model for assessing the effect of different optimal control strategies for controlling the spread of Hepatitus C disease in the community. Stability theory of differential equations is used to study the qualitative behavior of the system. The basic reproduction number that represents the epidemic indicator is obtained by using the condition of endemicity. Both the local stability and global stability conditions for disease free equilibrium is established. Uniqueness of endemic equilibrium point and its global stability conditions are proved. Numerical simulation of the model showed that applying all the intervention .strategies can successfully eliminate Hepatitus C viral disease from the community

کلمات کلیدی:

mathematical model, Hepatitus C virus, Basic reproduction number, protection