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Mathematical models of HIV and HPV coinfection

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Presenter Information

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Mathematical models of HIV and HPV coinfection.

HIV infected patients have an increased incidence of chronic HPV infection, leading to precancerous cells. To address the effect of HIV on HPV pathogenesis, we develop a mathematical model of HIV-HPV coinfection that captures known interactions such as decreased HPV-specific cytotoxic T cells and increased HPV viral production. From our mathematical analysis, we predict biological conditions under which coinfected individuals can clear HPV. We address the clinical implications of anti-retroviral therapy used to treat HIV in HPV-coinfected patients and compare it to previous clinical observations.