# A mathematical model for the transmission dynamics of trichomoniasis

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A mathematical model is proposed to study the transmission dynamics of trichomoniasis. For the model analysis, a threshold parameter called the basic reproduction number denoted by  $\mathcal{R}_0$ , is calculated. In the presence of reinfection, the model exhibits a backward bifurcation whenever  $\mathcal{R}_0 < 1$ . In the absence of reinfection, the model is without a backward bifurcation and the disease-free equilibrium is globally asymptotically stable for  $\mathcal{R}_0 < 1$  and unstable when  $\mathcal{R}_0 > 1$ . Sensitivity analysis of parameters involved in the formula of  $\mathcal{R}_0$  is studied. The most sensitive parameters for the transmission of the disease in the population are identified. Finally, numerical simulations are given to support the theoretical results.

#### References

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