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Parameter estimation for modelling intermittent androgen suppression therapy in prostate cancer patients

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Advanced prostate cancer is often treated by androgen suppression therapy, since prostate cells depend on androgens for proliferation and survival. To improve the patients' quality of life and possibly delay the development of resistance, intermittent androgen suppression (IAS) therapy can be given rather than continuous therapy. We consider a mathematical model of IAS therapy involving tumour cells, androgen, and the biomarker prostate-specific antigen and investigate parameter estimation with clinical data. Specifically, we implement iterative weighted least squares inverse problems to investigate the patient-specific parameters that can be confidently estimated.

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