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New approach to anti-angiogenic treatment modelling and control

We propose a modification of the family of models based on the idea of Hahnfeldt *et al.* (1999). We modify the models to better describe the case of treatment which is focused on blocking the angiogenic signalling. We compare the quality of fitting to the experimental data and predictions in the case of the Ergun *et al.* model.

We also propose a new mathematical description of the anti-angiogenic treatment goal. We assume that the main goal of anti-angiogenic treatment, despite the minimisation of the tumour volume, is to maintain high ratio of vessels volume that support the tumour to the actual tumour volume. We analyse it as an optimal control problem. The analytical solution of the problem is given in case of the Ergun *et al.* model.