Addendum to ‘A patient-specific computational model of hypoxia-modulated radiation resistance in glioblastoma using 18F-FMISO-PET’

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The reader should take note that the radiation loss term in the PIRT model (equations (2.4) and (2.1) in [1]) determines the rate of cell death due to radiation by interpreting the surviving fraction of cells (1 − S) from the linear-quadratic model (equation (2.3)) as the probability of cell death per treatment fraction. For this interpretation to make sense in the PIRT model, the unitless probability (1 − S) is interpreted as a rate because it is the instantaneous rate of cell death per treatment fraction. As fractionation was daily, this translates the units of this term to 1/day so that the net rate constant during therapy simulation (ρ(1 − S)) is well defined. The net proliferation rate (ρ) is presented in the text in units per year (1/year) as a matter of convenience, as tumour growth on the scale of year(s) is more easily understood on an intuitive level than growth per day (1/day).

Reference