

Review article

A new look at tumour proliferation

Anna Gasińska^{1,2}, Beata Biesaga¹

Recently, due to the progress in the research in the field of biological mechanisms affecting radiation response, tumour cell kinetics has been revised. Presently, it is assumed that of the population of slowly proliferating tumour cells has crucial influence on the results of radiotherapy results, contrary to previous beliefs that this effect is associated with fast proliferating tumour cells. The most likely reason may arise from the fact that this slowly proliferating population may contain malignant stem cells. In this review we present different models of tumour cell kinetics and methods of measuring cell proliferation in clinical practice. Due to the influence of other biological factors on the growth rate of tumour cells and the heterogeneity of this feature within one histological tumour type, proliferation rate has lost its predictive value in clinical practice.

Key words: cell cycle, cell proliferation models, repopulation, cell proliferation assessment methods

¹ Zakład Radiobiologii Klinicznej
Centrum Onkologii - Instytut im. Marii Skłodowskiej-Curie
Oddział w Krakowie

² Górnośląska Wyższa Szkoła Handlowa
Katedra Kosmetologii w Katowicach