An attempt to conceptualize the individual onco-functional balance: Why a standardized treatment is an illusion for diffuse low-grade glioma patients.

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In the era of evidence-based medicine, clinicians aim to establish standards of care from randomized studies. Following, personalized medicine has emerged, as new individualized biomarkers could help to predict sensitivity to specific treatment. In this paper, we show that, for diffuse low-grade glioma, some specificities - dual goal of both survival and functional gain, long duration of the disease with multistep treatments, multiparametric evaluation of the onco-functional balance of each treatment modality - call for a change of paradigm. After summarizing how to weight the benefits and risks of surgery, chemotherapy and radiotherapy, we show that the overall efficacy of a treatment modality cannot be assessed per se, as it depends on its integration in the whole sequence. Then, we revisit the notion of personalized medicine: instead of decision-making based solely on molecular profile, we plead for a recursive algorithm, allowing a dynamic evaluation of the onco-functional balance, integrating many individual characteristics of the patient's tumor and brain function.

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