

PubMed

U.S. National Library of Medicine
National Institutes of Health



Display Settings: Abstract

[Clin Neuropathol. 2010 Jan-Feb;29\(1\):41-54.](#)

Neuropathological biomarker candidates in brain tumors: key issues for translational efficiency.

Hainfellner JA, Heinzl H; 1Institute of Neurology and 2Core Unit for Medical Statistics and Informatics, Medical University of Vienna, Vienna, Austria.

Brain tumors comprise a large spectrum of rare malignancies in children and adults that are often associated with severe neurological symptoms and fatal outcome. Neuropathological tumor typing provides both prognostic and predictive tissue information which is the basis for optimal postoperative patient management and therapy. Molecular biomarkers may extend and refine prognostic and predictive information in a brain tumor case, providing more individualized and optimized treatment options. In the recent past a few neuropathological brain tumor biomarkers have translated smoothly into clinical use whereas many candidates show protracted translation. We investigated the causes of protracted translation of candidate brain tumor biomarkers. Considering the research environment from personal, social and systemic perspectives we identified eight determinants of translational success: methodology, funding, statistics, organization, phases of research, cooperation, self-reflection, and scientific progeny. Smoothly translating biomarkers are associated with low degrees of translational complexity whereas biomarkers with protracted translation are associated with high degrees. Key issues for translational efficiency of neuropathological brain tumor biomarker research seem to be related to (i) the strict orientation to the mission of medical research, that is the improvement of medical practice as primordial purpose of research, (ii) definition of research priorities according to clinical needs, and (iii) absorption of translational complexities by means of operatively beneficial standards. To this end, concrete actions should comprise adequate scientific education of young investigators, and shaping of integrative diagnostics and therapy research both on the local level and the level of influential international brain tumor research platforms.

PMID: 20040333 [PubMed - in process]

[LinkOut - more resources](#)