Grading of Diffuse Astrocytic Gliomas: A Review of Studies Before and After the Advent of IDH Testing.

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Estimating the malignancy level of tumors is key to management, and has been part of oncology practice for the past ~100 years. A central aspect of assessing malignancy level is based on histological "grading"-a process in which a pathologist evaluates microscopic features of a tumor and interprets those findings in light of large prognostic studies. For the diffuse astrocytic gliomas, there have been many such studies over the past century and these have proven useful in estimating prognosis for patients. With the advent of molecular genetics, molecular diagnostic testing has been added to histological evaluation in the armamentarium of the pathologist, and the recent World Health Organization (WHO) Classification of Tumors of the Central Nervous System encourages testing for isocitrate dehydrogenase (IDH) gene status in the classification of diffuse astrocytic gliomas. The present review catalogues a large series of diffuse astrocytic glioma grading studies over the past few decades, and compares the prognostic value of such grading schema before and after the emergence of IDH testing. The review concludes that novel approaches to diffuse astrocytic tumor grading are required in the era of IDH testing.

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