Round table discussion: Glia are centrally involved in the pathogenic process of degenerative diseases and should be a therapeutic target.

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Microglial cells, discovered by Spanish anatomist del Rio Hortega, are considered as part of the immune system and acting in the central nervous system as macrophages act in the periphery. Resting microglia activates and converts into “reactive” microglia as soon as there is an insult in the brain, reactive microglia appears in stroke but also is present in neurodegenerative diseases. For years reactive microglial cells have been considered as detrimental and the cause of further damage in neurological diseases or in stroke. This view should change because these cells may display phenotypes with quite opposite actions. Thus resting microglia can convert into proinflammatory (M1) or neuroprotective (M2). Furthermore, in vitro it is possible to drift M1 to M2 by pharmacological intervention. We here discuss whether microglia may be protective in neurodegenerative diseases and a target for therapeutic intervention. It should be noted that, as of today, interventions that only target neurons have not yielded the expected results, i.e. they have not served to slow down the progression of these diseases.