IS MICROGLIA ASSOCIATED WITH GLIOBLASTOMA ITS ENEMY OR ALLY?

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INTRODUCTION

Glioblastoma (GBM) is heavily infiltrated with tumor-associated microglia/macrophages (TAM). Recently, the role of TAM in GBM progression has received a great deal of interest. Bearing in mind that the number of peripheral macrophages by the 14th day is negligible, in our study TAM were referred to as microglia. Here we evaluated histopathological characterization of TAM, the kinetics of their infiltration and their impact on U87 orthotopic GBM, a commonly used model in preclinical research.

MATERIALS & METHODS

After placing Wistar rats on stereotaxic frame (Stoelting®, USA), U87 cell suspension was injected into putamen. The animals were sacrificed 4, 7 and 14 days post-inoculation (d4, d7, and d14, respectively). Following the tissue processing, immunohistochemical staining with morphometric analyses were performed using anti-Ki67, anti-human nucleoli, anti-Iba1, and anti-CD34 antibodies.

CONCLUSION

Clarifying that microglia in this experimental GBM model showed similar morphological pattern and pro-invasive features as microglia in human GBM, these findings highlight the use of microglia in U87 experimental GBM as a potential target for manipulating GBM growth and a new strategy to fight with.