INTRODUCTION

Traumatic brain injury (TBI) afflicts over 3 million Americans every year. While TBI affects individuals of all ages, the elderly (aged 65 years and older) experience higher mortality and greater long-term neurocognitive morbidity compared to younger adults. Our lab has recently shown that age introduces an uninvited guest in the brains – the T cell. Infiltrating T cells can interact with microglia, the gatekeepers in the central nervous system and the main antigen-presenting cell in the brain, in age-associated neurodegenerative diseases. We previously published that aged mouse brains showed significant increases in T cells two months post-TBI. These T cells were largely CD8+ T effector memory (EM) cells. Microglia are thought to play a role in recruitment of these inflammatory cells making the interplay between microglia and the peripheral immune system in TBI crucial for the development of new treatments and improved patient outcomes.

METHODS

Use of PLX5622 to deplete microglia in the brain

RESULTS

Microglial depletion reduces T-cell infiltration after TBI

PLX5622 depletes microglia in aged and young mice

We hypothesize that depletion of microglia will attenuate accumulation of T-cells post-TBI

NEXT STEPS

CONCLUSIONS

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