INTRODUCTION

Immunology of neurosurgical diseases

Alfredo Quiñones-Hinojosa, MD,1 Maryam Rahman, MD, MS,2 Michael Lim, MD,3 Paola Suarez-Meade, MD,4 and Lina Marenco-Hillembrand, MD1

1Department of Neurosurgery, Mayo Clinic, Jacksonville, Florida; 2Lillian S. Wells Department of Neurosurgery, University of Florida College of Medicine, Gainesville, Florida; and 3Department of Neurosurgery, Stanford University, Palo Alto, California

Neuroimmunology first emerged as an independent discipline early in the 1980s. Initially, the brain was regarded as an immune-privileged site, as the blood-brain barrier prevented immune access. To our benefit, the field of immunology evolved significantly, and, 40 years from its inception, neuroimmunology has proven that these two systems are closely intertwined. Over the years, we have garnered a vast improvement in the understanding of the intricate crosstalk and mechanistic insights between the immune system and the central nervous system.

This issue of Neurosurgical Focus on neuroimmunology aims to describe the most recent developments in immunology and immunotherapy for neurosurgical disease. In this issue, we examine the tenants and considerations for novel immunotherapeutic strategies in a variety of neurosurgical pathologies, ranging from brain tumor immunotherapy, neuroimmune interactions in spinal and cranial disease, immunotherapy for spinal and peripheral nerve tumors, to the latest methods for modeling and studying immune disease in vivo. This issue is divided into two sections discussing advances in brain tumor immunology and strategies for targeting the immune system in spinal and peripheral nerve disease.

We hope the readers enjoy this insightful issue as we share the excellence, expertise, and the most cutting-edge research in neuroimmunology applicable to neurosurgery.


Disclosures

Dr. Lim: consultant for Tocagen, Stryker, Noxxon, VBI, InCephalo Therapeutics, Pyramid Bio, Merck, BMS, Kyowa-Kyrin, Egret Therapeutics, Sanaoia, Hemispherian, Black Diamond Therapeutics, and Novocure; direct stock ownership in Egret Therapeutics; and patent holder with Johns Hopkins.

Correspondence

Alfredo Quiñones-Hinojosa: quinones-hinojosa.alfredo@mayo.edu.