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# Artificial Intelligence and Neuro-Medicine: Emerging Trends in Bipolar Disorder, Glioblastoma and Alzheimer's Disease

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of asymptomatic vs borderline vs symptomatic subsets.

**Keywords:** Etiopathogenesis; Neurological Disorders; Alzheimer's Disease: Neurons

**Abbreviations:** AI: Artificial Intelligence; O-Methylserine Dodecylamide.

#### **Editorial**

Dissecting the intricate "neuro-immune cross-talks" in the complex etiopathogenesis of neurological disorders primarily bipolar disorder, glioblastoma and Alzheimer's disease in genetically disparate susceptible cohorts of heterogeneous population-pools by amalgamating precision-based therapeutic targeting of Ceramide-Wnt/ Frizzled-Toll like receptors-autophagy biochemical/ metabolic signaling cascades with Artificial Intelligence (AI) offers fascinating healthcare management avenues in eventual pragmatic, evidence-based predictive biomarker development in the Covid-vaccination era [1-4]. Moreover, CRISPR-Cas genetic engineering technology has emerged as an enigmatic modulator of complex human genetic diseases including neurological diseases utilizing genome editing and detecting specific DNA/RNA sequences to gene expression control warranting future dynamic collaborations for immuno-inflammatory disease(s)-management in neuromedicine in the global Covid-19/Omicron pandemic and Covid-19 vaccination era [5]. In my expert opinion, the disproportionate share of psychosocial distress and neurobehavioral deficits warrants a robust, evidence-based, pragmatic "AI-bioengineering immunotherapeutic model" for design of pharmacological scaffolds, novel drugs and clinically validated predictive biomarkers for effective management of bipolar disorder, Alzheimer's disease and glioblastoma amongst genetically susceptible at-risk cohorts

During my recent meaningful collaborative discussions with senior neurosurgeons of Virginia, USA and Lucknow/ New Delhi, India, I gained critical insights in the AI algorithms and sophisticated, non-invasive gammaknife neuro-radio-surgery for precision-based neuroradiodiagnostic assessment of the hypoxic, vascular insufficient and inflammatory tumor microenvironment/ heterogeneous tissue core in the malignant brain tumor tissue of glioblastoma patients of American and Asian-Indian genetic profiles/ethnicities for evidence-based outcomes for high-quality treatment and patient-satisfaction.

Abnormal endocytosis in post-mitotic neurons may be attributed to alterations in the sphingomyelin -ceramide metabolism, resulting in the intracellular accumulation of ceramide; O-methylserine dodecylamide (MSD), a lysosomotropic agent, disrupts neuronal lysosomal proton gradient, leading to intra-neuronal ceramide accumulation, and perturbations in the intracellular transport of cholesterol and sphingolipids have been proposed to play a significant role in Alzheimer's disease [6]. Intriguingly, the emergence of AI in neuro-medicine clinical research undoubtedly offers immense opportunities to demystify the intricacies involved in neurodegeneration and interrelated neuropathologies. Healthcare systems globally are encouraging AI to achieve the "quadruple objective": improving patient experience (increasing productivity and efficacy in care delivery); improving population health; transcribing prescriptions, treating patients remotely, and reducing per person healthcare expenses [7-10]; and increasing the working conditions of healthcare professionals.

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AI algorithms are extensively used in healthcare, including diagnostics, development of treatment protocols, medication research, customized treatment regimens, clinical risk assessment, healthcare data security, image analysis, digital nursing assistants, AI-assisted robotic surgery, and health monitoring. Overall, the future holds tremendous promise for designing a well-defined pragmatic and ethical "AI-Ceramide-TLR-Autophagy-Wnt/CRISPR-Cas Neuro-Immune Genetic Blue-Print" healthcare roadmap for diminishing the overwhelming public health challenge of bipolar disorder, glioblastoma and Alzheimer's Disease amongst population-pools of genetically mixed ethnicities worldwide.

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