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REVIEWER'S REPORT

Manuscript No.: IJAR-58699

Title: Transcriptomic Horizons: The Emergence of RNA-Based Biomarkers for Prognostication After Cardiac Arrest.

Recommendation:
Accept as it is .....
Accept after minor revision.....
Accept after major revision .....
Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality	Excellent			
Clarity		Good		
Significance	Excellent			

Reviewer's ID: Dr. Sumathi

Detailed Reviewer's Report

1. **Transcriptomic horizons refer to the evolving frontiers of RNA sequencing and gene expression analysis. This field now moves beyond traditional bulk RNA-seq to high-resolution single-cell multi-omics and spatially resolved transcriptomics, mapping complex cellular landscapes in health and disease.**
2. **RNA-based biomarkers are dynamic molecular indicators—including messenger RNAs, microRNAs, and long non-coding RNAs—that reflect real-time changes in cell state, gene expression, and disease progression. Found stably in biofluids via liquid biopsies, they offer high sensitivity for non-invasive early diagnosis, prognosis, and treatment monitoring.**
3. **Prognostication is the act of making a prediction or a forecast about what will happen in the future. It can also mean a sign, omen, or portent that gives a hint about an upcoming event.**
4. **Neuroprognostication after cardiac arrest determines a patient's chance of brain recovery by utilizing a multimodal approach, waiting at least 72 hours, and excluding confounders like sedation.**

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5. **The SLC2A1 gene encodes the glucose transporter protein type 1 (GLUT1), which is critical for moving glucose across the blood-brain barrier and into cells. Pathogenic variants or mutations in this gene cause GLUT1 Deficiency Syndrome, a rare neurometabolic disorder characterized by seizures, developmental delay, and movement disorders.**
6. **MicroRNA (miRNA) is a small, non-coding RNA molecule about 21 to 25 nucleotides long. It regulates gene expression after transcription. By binding to messenger RNA (mRNA), miRNA stops proteins from forming or breaks down the mRNA. This controls cell growth, tissue development, and health.**
7. **A non-coding RNA (ncRNA) is a functional RNA molecule transcribed from DNA that is not translated into a protein. Instead of building proteins like messenger RNA (mRNA), ncRNAs perform critical jobs like regulating gene expression, building cell parts, and helping chemical processes happen inside cells.**
8. **Messenger RNA (mRNA) is a single-stranded molecule that carries genetic instructions from DNA in the cell nucleus to the ribosomes in the cytoplasm. It acts as a temporary blueprint telling the cell how to build specific proteins needed for life.**
9. **Key words are good.**
10. **This research is one of the molecular level work.**
11. **Theoretical part is given good with significant points.**
12. **But can be made result part tables with values and graphs.**
13. **Summary points also be added.**
14. **References can be aligned with alphabetical order.**
15. **After those changes good to publish in your journal.**