ISSN: 2167-7182
Gerontology & Geriatric Research

OPEN ACCESS Freely available online

Opinion

Impairment: Unveiling Novel Insights into Pathogenesis and Therapeutic Potential

Frazee Bradle*

Department of Clinical Gerontology and Geriatric Rehabilitation, University of Bergen, 5007 Bergen, Norway

INTRODUCTION

Vascular cognitive impairment encompasses a spectrum of cognitive deficits resulting from cerebrovascular pathology, ranging from mild cognitive impairment to vascular dementia. Despite significant strides in understanding its etiology and pathogenesis, therapeutic options for VCI remain limited. In recent years, long non-coding RNAs have emerged as key regulators of gene expression and cellular processes, with implications in various diseases, including neurodegenerative disorders. This article explores the potential intersections between lncRNAs and VCI, elucidating their roles in pathogenesis, diagnostic biomarker discovery, and therapeutic avenues [1-3].

Vascular cognitive impairment is a prevalent cause of cognitive decline, characterized by cerebrovascular pathology leading to cognitive deficits. While the pathophysiology of VCI involves multifaceted mechanisms, emerging evidence suggests the involvement of non-coding RNAs, particularly long non-coding RNAs, in modulating gene expression and cellular processes implicated in VCI.

DESCRIPTION

This section provides an overview of lncRNAs, highlighting their diverse roles in regulating gene expression at transcriptional, post-transcriptional, and epigenetic levels. Emphasis is placed on the functional diversity of lncRNAs and their relevance in neurodegenerative disorders. This section delves into the potential involvement of lncRNAs in the pathogenesis of VCI. It discusses experimental evidence implicating specific lncRNAs in vascular dysfunction, blood-brain barrier disruption, neuroinflammation, and neuronal damage, all of which contribute to cognitive impairment in VCI.

Given their stability in body fluids and dysregulated expression in disease states, lncRNAs hold promise as diagnostic biomarkers for VCI. This section explores studies identifying lncRNA signatures associated with VCI and discusses their potential utility in early diagnosis and prognosis. Therapeutic interventions targeting lncRNAs represent a novel approach for ameliorating cognitive impairment in VCI. This section discusses strategies for modulating lncRNA expression and function, including antisense oligonucleotides, small molecule inhibitors, and RNA-based therapeutics [4,5]. Preclinical studies highlighting the efficacy of lncRNA-targeted therapies in mitigating vascular pathology and cognitive deficits are reviewed.

Despite promising findings, several challenges exist in translating lncRNA-based therapies to clinical applications for VCI. This section discusses limitations such as delivery barriers, off-target effects, and the need for comprehensive preclinical validation. Additionally, future directions, including the identification of specific lncRNA targets and the development of personalized therapeutic approaches, are outlined.

CONCLUSION

In conclusion, the intersection between lncRNAs and vascular cognitive impairment represents a burgeoning field with significant implications for understanding disease pathogenesis and developing novel therapeutic strategies. Continued research into the roles of lncRNAs in VCI holds promise for advancing diagnostics and treatment modalities, ultimately improving clinical outcomes for affected individuals.

REFERENCES

1. Dancker C. Effects of dobutamine, dopamine, phenylephrine and noradrenaline on systemic haemodynamics and intestinal perfusion in isoflurane anaesthetised horses. Equine Vet J 2018; 50:104-10.
2. Holt JP. Ventricular volumes and body weight in mammals. Am J Physiol Cell Physiol 1968; 215:704-15.
3. Elias A, Mallett S, Daoud-Elias M, Poggi JN, Clarke M. Prognostic models in acute pulmonary embolism: A systematic review and meta-analysis. BMJ open 2016; 6:010324.
4. Keller K, Tesche C, Gerhold-Ay A, Nickels S, Klok FA, Rappold L, et al. Quality of life and functional limitations after pulmonary embolism and its prognostic relevance. J Thromb Haemost 2019; 17:1923-1934.
5. Barco S, Schmidtmann I, Ageno W, Anušić T, Bauersachs RM, Becattini C, et al. Survival and quality of life after early discharge in low-risk pulmonary embolism. Eur Respir J 2021; 57.

Correspondence to: Frazee Bradle, Department of Clinical Gerontology and Geriatric Rehabilitation, University of Bergen, 5007 Bergen, Norway; E-mail: FrazeeBradley5@gmail.com

Received: 01-February-2024, Manuscript No. jggr-23-25280; **Editor assigned:** 02-February-2024, Pre QC No. P-25280; **Reviewed:** 16-February-2024, QC No. Q-25280; **Revised:** 22-February-2024, Manuscript No. R-25280; **Published:** 29-February-2024, DOI: 10.35248/2167-7182.2024.13.719

Citation: Bradle F (2024). Impairment: Unveiling Novel Insights into Pathogenesis and Therapeutic Potential. J Gerontol Geriatr Res. 13: 719.