

Diabetes or Cardiovascular Ischaemic Events in HIV-Infected Individuals: The Role of Ageing Biomarkers and Monocyte Activation

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Introduction

People Living With HIV (PLWH) are at an increased risk of developing diabetes and cardiovascular ischaemic events, which are key contributors to morbidity and mortality in this population. Ageing biomarkers and monocyte activation have emerged as important factors in the pathogenesis of these conditions in PLWH. This article explores the interplay between HIV infection, ageing biomarkers, monocyte activation, and the development of diabetes and cardiovascular ischaemic events. Understanding these mechanisms is crucial for identifying potential biomarkers, developing preventive strategies, and improving the management of these comorbidities in HIV-infected individuals [1,2].

Description

Diabetes and cardiovascular ischaemic events are significant health concerns in PLWH. The prevalence of these conditions is higher in this population compared to the general population, and they contribute significantly to morbidity and mortality. This section introduces the topic and highlights the need for understanding the role of ageing biomarkers and monocyte activation in the development of these comorbidities [3]. HIV infection has been associated with an accelerated ageing process, characterized by increased immune activation, inflammation, and cellular senescence. This section explores the mechanisms underlying accelerated ageing in PLWH and its implications for the development of diabetes and cardiovascular ischaemic events. Chronic inflammation, driven by ageing biomarkers and monocyte activation, contributes to insulin resistance, a key mechanism underlying diabetes development in PLWH. This section discusses the link between chronic inflammation, insulin resistance, and diabetes.

Ageing biomarkers, such as telomere length, epigenetic changes, and markers of cellular senescence, provide insights into the biological ageing process. This section discusses the role of ageing biomarkers in PLWH and their association with diabetes and cardiovascular ischaemic events [4,5]. Chronic immune activation and inflammation are hallmarks of HIV infection. Monocyte activation, specifically, plays a crucial role in the pathogenesis of HIV-related comorbidities. This section examines the role of monocyte activation and the associated inflammatory response in diabetes and cardiovascular ischaemic events. Different subsets of monocytes exhibit distinct phenotypes and functional characteristics. This section explores the role of monocyte subsets in the development of diabetes and cardiovascular ischaemic events in PLWH and their potential as biomarkers for risk stratification [6].

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Conclusion

Diabetes and cardiovascular ischaemic events pose significant challenges in the management of PLWH. The interplay between HIV infection, ageing biomarkers, and monocyte activation contributes to the development of these comorbidities. Understanding the underlying mechanisms and identifying biomarkers can aid in risk stratification, early detection, and targeted interventions. By addressing these factors, healthcare providers can improve the management and prevention of diabetes and cardiovascular ischaemic events in PLWH, ultimately enhancing their overall health outcomes.

Acknowledgement

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Conflict of Interest

None.

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