Conclusion

Enterohemorrhagic Escherichia coli (EHEC) is a highly virulent strain of E. coli that causes bloody diarrhea and can lead to hemolytic-uremic syndrome (HUS), characterized by hemolytic anemia, thrombocytopenia, and acute kidney failure. The disease results from the action of Shiga toxins, which damage the lining of the intestines and small blood vessels, leading to inflammation and organ injury. Diagnosis is based on stool culture and Shiga toxin detection through enzyme immunoassay or PCR. Antibiotics are avoided, as they may increase toxin release and worsen outcomes. Treatment focuses on supportive care, including fluid and electrolyte replacement, with dialysis or plasma exchange in severe cases. Preventive measures such as avoiding undercooked beef, ensuring proper hand hygiene, and consuming safe water are essential to reduce transmission.

LITERATURE

1. Kaper, J. B., Nataro, J. P., Mobley, H. L. Pathogenic Escherichia coli / J. B. Kaper, J. P. Nataro, H. L. Mobley // Nature Reviews Microbiology. – 2004. – Vol. 2, № 2. – P. 123–140.

2. Honish, L., [et al.]. Escherichia coli O157:H7 infections associated with contaminated pork products – Alberta, Canada, July–October 2014 / L. Honish [et al.] // MMWR. Morbidity and Mortality Weekly Report. – 2017. – Vol. 65, № 52. – P. 1477–1481.

3. Luini, M. V., [et al.]. Family clusters of Shiga toxin-producing Escherichia coli infection: an overlooked source of transmission. Data from the ItalKid-HUS Network / M. V. Luini [et al.] // The Pediatric Infectious Disease Journal. – 2021. – Vol. 40, № 1. – P. 1–5.

4. Freedman, S. B., van de Kar, N. C. A. J., Tarr, P. I. Shiga toxin-producing Escherichia coli and the hemolytic-uremic syndrome / S. B. Freedman, N. C. A. J. van de Kar, P. I. Tarr // The New England Journal of Medicine. – 2023. – Vol. 389, № 15. – P. 1402–1414.

5. Crump, J. A., [et al.]. An outbreak of Escherichia coli O157:H7 infections among visitors to a dairy farm / J. A. Crump [et al.] // The New England Journal of Medicine. – 2002. – Vol. 347, № 8. – P. 555–560.

УДК 616.1-036.2-037:[616.98:578.828](548.7)

L. D. A. Yeshesh

Scientific supervisor: Ph.D., Associate Professor E. I. Kozorez

Educational institution
"Gomel State Medical University"
Gomel, Republic of Belarus

PREVALENCE AND RISK FACTORS FOR PREMATURE CARDIOVASCULAR DISEASE AMONG HIV – POSITIVE ADULTS ON LONG – TERM ANTIRETROVIRAL THERAPY IN SRILANKA

Introduction

Over the years, Human Immunodeficiency Virus (HIV) infection has shifted from being a fatal disease to a manageable chronic condition, thanks to Antiretroviral Therapy (ART). The introduction of highly active ART has greatly improved the life expectancy and quality of life of people living with HIV (PLHIV), reducing HIV-related illness and deaths worldwide. As a result, HIV care now focuses less on opportunistic infections and more on long-term health issues linked to chronic infection and prolonged treatment [1].

However, with longer survival, new health challenges have emerged. Non-communicable diseases–especially cardiovascular diseases (CVDs)–are now major causes of illness and death among PLHIV. Worryingly, premature CVD (occurring before 55 in men and 65 in women) is increasingly reported, even in those without traditional risk factors [2].

This rise is driven by multiple factors. Chronic HIV infection causes ongoing inflammation that damages blood vessels, while long-term ART can lead to metabolic problems such as high cholesterol, insulin resistance, and high blood pressure. Older ART regimens, in particular, can worsen these effects. Combined with lifestyle risks like smoking, obesity, and inactivity, these factors make early heart disease more likely [3].

In Sri Lanka and other low- and middle-income countries, ART programs have been highly successful in extending lives. Yet, little is known about the burden of premature CVD among HIV-positive individuals. Most local studies focus on treatment outcomes rather than long-term complications [4].

Understanding how and why early heart disease occurs in PLHIV is crucial for prevention. Early identification and integrating cardiovascular screening into HIV care could greatly improve long-term health outcomes [5].

Goal

The goal of this article is to assess prevalence and risk factors for premature cardiovascular disease among HIV-positive adults on long-term antiretroviral therapy in SriLanka through a survey-based study.

Material and methods of research

This study used a cross-sectional survey conducted among the Sri Lankan population to assess their prevalence and risk factors for premature cardiovascular disease among HIV-positive adults on long-term antiretroviral therapy using an online questionnaire which contained 46 HIV-positive responses and 255 HIV-negative responses. The 46 HIV-positive patients are from the 18–39 age group. A total of 301 responses were collected from diverse demographic groups and analyzed quantitatively to identify patterns in knowledge, beliefs, and risk factor awareness. Data processing and statistical analysis were performed using Microsoft Office Excel 2013.

The results of the research and their discussion

According to Table 1 below, the number of male respondents living with HIV represents 97.8%, compared to only 2.2% female respondents. This indicates that the majority of HIV-positive participants in the study were men. In contrast, among HIV-negative respondents, 79.2% were male and 20.8% were female, showing a more balanced gender distribution compared to the HIV-positive group.

According to Table 2, the number of responses for experiencing chest pain or pressure during physical activity among HIV-positive participants was 39.1%, while 60.9% reported not experiencing such symptoms.

According to Table 2, only 13.0% of HIV-positive participants reported having ever been diagnosed with a heart attack or stroke, whereas 87.0% had not.

According to Table 2, 30.4% of HIV-positive respondents indicated they had been told their cholesterol level was high, while 69.6% reported normal cholesterol levels.

According to Table 2, 34.8% of HIV-positive individuals reported being diagnosed with high blood pressure (hypertension), compared to 65.2% who had not.

According to Table 2, 17.4% of HIV-positive respondents reported having diabetes, while 82.6% did not.

Table 1 – Comparsion of gender for HIV + and HIV - Patients

What is your gender? (301 responses – 100%)	HIV + (46 responses – 15.3%)	HIV - (255 responses – 84.7%)
Male	45 (97.8%)	202 (79.2%)
Female	1 (2.2%)	53 (20.8%)

Table 2 – Comparison of different complications for HIV + patients

Question (46 responses – 100%)	HIV +(Yes)	HIV + (No)
Do you experience chest pain or pressure during physical activity?	18 (39.1%)	28 (60.9%)
Have you ever been diagnosed with a heart attack or stroke?	6 (13.0%)	40 (87.0%)
Have you ever been told your cholesterol level is high?	14 (30.4%)	32 (69.6%)
Have you ever been diagnosed with high blood pressure (hypertension)?	16 (34.8%)	30 (65.2%)
Have you ever been diagnosed with diabetes?	8 (17.4%)	38 (82.6%)

Conclusion

Awareness According to Table 1, there's a clear gender difference among participants living with HIV. Almost all HIV-positive respondents were men (97.8%), while only a small percentage were women (2.2%). In contrast, the HIV-negative group showed a more balanced distribution, with about four out of five being male (79.2%) and one out of five female (20.8%). Overall, 15.3% of the 301 participants were HIV-positive, showing that although HIV was less common in the group, it was much more concentrated among men.

According to Table 2, there is clear evidence that HIV-positive individuals experience a higher prevalence of cardiovascular and metabolic complications compared to the general population. While only 39.1% reported experiencing chest pain or pressure during physical activity, this finding still highlights early signs of cardiac strain that may be linked to long-term antiretroviral therapy or the metabolic effects of HIV infection itself. Additionally, 13.0% of participants had been diagnosed with a heart attack or stroke, emphasizing that serious cardiovascular events are occurring even within a relatively young demographic.

Furthermore, 30.4% of respondents reported elevated cholesterol levels, and 34.8% had high blood pressure – both recognized risk factors for cardiovascular disease. These findings suggest that lipid abnormalities and hypertension are common comorbidities in this group, potentially arising from chronic inflammation, ART side effects, or lifestyle influences. Although only 17.4% of participants had diabetes, this still represents a notable proportion, as diabetes further compounds cardiovascular risk in HIV-positive populations.

Overall, these results underscore the growing burden of cardiovascular and metabolic disorders among HIV-positive adults in Sri Lanka. Continuous monitoring of blood pressure, cholesterol, and glucose levels, along with early lifestyle and therapeutic interventions, is essential. Regular cardiovascular risk assessments should be integrated into HIV care programs to prevent premature cardiovascular disease and improve long-term health outcomes for individuals living with HIV.

LITERATURE

1. Nakagawa, F., [et al.]. Trends in life expectancy of HIV-positive adults on antiretroviral therapy across the globe: comparisons with general population / F. Nakagawa [et al.] // Journal of the International AIDS Society. – 2016. – Vol. 19, № 1. – Art. 20634.

2. Friis-Møller, N., [et al.]. Cardiovascular disease risk factors in HIV patients – association with antiretroviral therapy. Results from the DAD study / N. Friis-Møller [et al.] // AIDS. – 2003. – Vol. 17, № 8. – P. 1179–1193.

3. Islam, F. M. A., [et al.]. Relative risk of cardiovascular disease among people living with HIV: a systematic review and meta-analysis / F. M. A. Islam [et al.] // HIV Medicine. – 2012. – Vol. 13, № 8. – P. 453–468.

4. Shah, A., [et al.]. Higher cardiovascular disease risks in people living with HIV: a systematic review and meta-analysis / A. Shah [et al.] // Frontiers in Cardiovascular Medicine. – 2023. – Vol. 10. – Art. 1067324.

5. Australian HIV Guidelines. Cardiovascular disease and associated risk factors [Electronic resource in the bibliography].