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Effect of Premature Menopause on Cardiovascular Diseases: A Systematic Review

Yeganeh Rajabi[1], Amirreza Jamshidbeigi[1], Amir Ghasemi[2*]

[1]Student Research Committee, Mashhad University of Medical Sciences, Mashhad, Iran
[2]Quchan School of Nursing, Mashhad University of Medical Sciences, Mashhad, Iran

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***Corresponding Author:**
Quchan School of Nursing, Mashhad University of Medical Sciences, Mashhad, Iran

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ABSTRACT

Introduction: Cardiovascular diseases (CVD) encompass a range of heart and blood vessel disorders, such as coronary heart disease and rheumatic heart disease. Heart disease is a leading cause of premature death in young women. Premature menopause, affecting approximately one percent of women who experience menopause before the age of 40, is associated with an increased risk of CVD. This study aimed to assess the impact of premature menopause on cardiovascular diseases.

Search Strategy: This article is a systematic review based on PRISMA guidelines. Our advanced search was conducted in PubMed, Scopus, and Google Scholar databases using related MeSH terms such as "premature menopause," "cardiovascular," and "menstruation" from 1996 to 2024. Articles were reviewed until April 16, 2024, and excluded those published after this date. The inclusion criteria were: (1) all published original articles, (2) English experimental articles, and 3) studies involving women who experienced menopause before the age of 40 or early menopause due to surgery. The exclusion criteria were: (1) duplicate articles, (2) non-original articles such as review articles, and (3) unavailability of the full text.

Results: In the initial review, 157 articles were identified. Fourteen studies were excluded due to duplication, and 23 articles were reviewed based on their titles and abstracts. Of these, 11 were excluded for being unrelated to the primary purpose of the research, resulting in 12 articles being selected for detailed review. Among these, 10 articles confirmed the effect of early menopause on cardiovascular disease, while two did not find a connection. These studies indicate that early menopause is associated with more than a 20% increased risk of CVD compared to normal menopause. Given that CVD is age-related. Early menopause is associated with DNA repair damage pathways that contribute to accelerated aging in organs and tissues, including the ovaries, and ultimately in the entire body, thereby raising the likelihood of CVD.

Conclusion and Discussion: The review of these studies shows that premature menopause plays a role in the risk of CVD and should be considered an important factor in CVD screening. More research is needed to clarify this issue.

Keywords: Cardiovascular diseases, Menstruation , Premature menopause, Systematic review

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