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EPIDEMIOLOGY OF OSTEOARTHRITIS (OA) IN WOMEN

Nida tabassum khan[1], Zainab Taimur

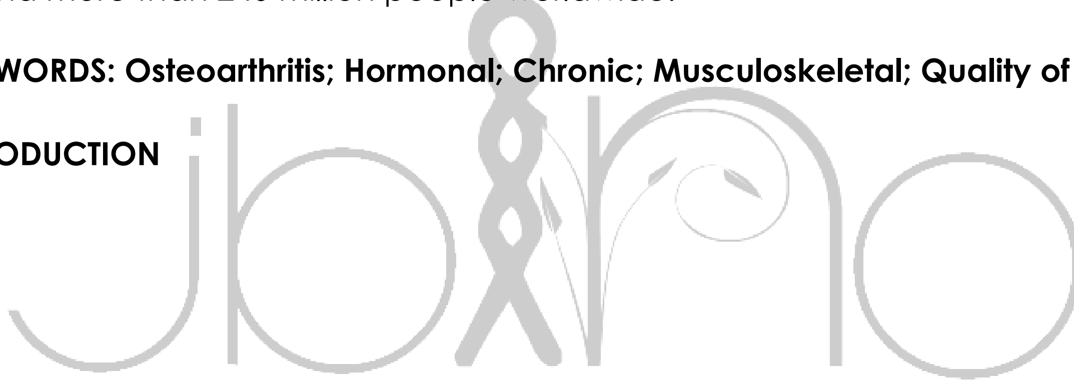
Department of Biotechnology, Faculty of Life Sciences & Informatics, Balochistan University of Information Technology, Engineering and Management Sciences, Takatu Campus, Airport Road, Quetta, Balochistan

ABSTRACT

Osteoarthritis (OA) is a type of arthritis that causes joint pain and impairment of function. Although osteoarthritis has commonly been attributed to the "wear and tear" of aging, it is now understood as a complex disease involving breakdown of cartilage between bones, bone remodeling, and joint inflammation. Although it involves any joint in the body, the joints most frequently affected are the hips, knees, feet, and hands. Osteoarthritis is the most common type of arthritis and affects an estimated 32 million people in the US and more than 240 million people worldwide.

KEY WORDS: Osteoarthritis; Hormonal; Chronic; Musculoskeletal; Quality of Life.

INTRODUCTION



[1] nidatabassumkhan@yahoo.com

Osteoarthritis is a widespread progressive, multifactorial, and chronic joint disease that is associated with painfulness, stiffness, and functional deficiency [1]. It contributes nearly one-fifth of the total burden of osteoarthritis worldwide and it is more common in old age and in individuals with obesity [2]. Nowadays, knee osteoarthritis is the most common type which cannot be permanently treated, except knee arthroplasty, which is believed to be effective when the disease is in its severe forms [3]. Since osteoarthritis results in serious pain and restricted mobility, it impacts the functioning of patients in their daily chores and reduces the quality of life [4]. The hormonal factors, the differences in the structure of the joints, and the increased life expectancy are particularly problematic to women [5]. Consequently, the evaluation of quality of life in female patients with osteoarthritis is necessary to determine the effect of the disease on the physical, psychological, and social health of the patient [6].

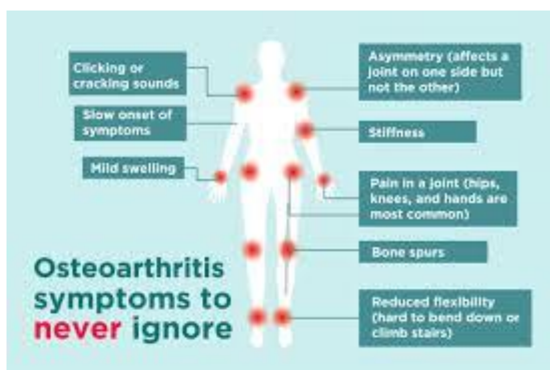


Fig 1. Symptoms of Osteoarthritis in women

Epidemiology

Joint diseases affect hundreds of millions of patients throughout the world, causing pain and disability with great impact on individuals and on society as a whole. Osteoarthritis is the most common joint disease; in the near future, it is projected to rank second for women and fourth for men in the developed countries in terms of years lived with disability [7]. Elderly patients are most often affected (joint diseases account for half of all chronic conditions in persons aged 65 years and over) and, because the number of individuals over the age of 50 years is expected to double worldwide between 1990 and 2020, the global burden of Osteoarthritis will increase dramatically [8].

Unless we invest in increased research and education now to decrease the future burden of joint disease, Osteoarthritis in the ageing population will generate a global avalanche of costs and disability [9, 10]. The most common patients are the aged; joint diseases are close to fifty percent of the chronic conditions in people aged 65 and above [11]. Since the population of people aged above 50 years is projected to increase by twice around the world in the period between 1990 and 2020, global burden of osteoarthritis will keep increasing at an alarming rate [12]. Unless proper preventive action, research and educational initiatives are taken the problem of Osteoarthritis in aging populations will still create massive healthcare bills and disability that imposes a

huge burden on individuals, families, and health systems [13].
Knee osteoarthritis in young adults is common after knee injury. In women who sustained an anterior cruciate ligament injury in soccer, 51% (mean age 31) had radiographic changes after 12 years [14]. Men, 41% (mean age 36) had Osteoarthritis after 14 years [15]. An injury to the menisci during middle age resulting in a horizontal tear is more probably the first signal of an already ongoing Osteoarthritis process of the knee [16]. Known risk factors seem to contribute to Osteoarthritis through pathways related to (1) mechanical aspects of the joint and (2) the musculoskeletal system [17].

Osteoarthritis is a multi-factorial disease that develops through a combination of mechanical, biological, and hormonal factors [18]. Aging is the strongest risk factor for osteoarthritis .With age, the cartilage loses elasticity and its ability to repair, leading to gradual degeneration of joint surfaces [19]. Obesity increases the risk by adding mechanical stress on weight-bearing joints, especially the knees and hips. In addition, excess body fat produces inflammatory substances that can further damage joint tissues [20].

Joint Injury is another major cause, especially in younger adults. Studies have shown that individuals who sustain anterior cruciate ligament (ACL) or meniscal injuries are at higher risk of developing osteoarthritis later in life [21]. For example, 51% of women with an ACL injury in soccer developed radiographic signs of osteoarthritis within 12 years, and 41% of men within 14 years. These injuries disturb joint mechanics and accelerate cartilage breakdown [22].

Hormonal factors also play a role, particularly in women. After menopause, the decline in estrogen levels may reduce cartilage protection and increase inflammation, which partly explains why osteoarthritis is more common in females [23]. Together, these factors interact to disturb the normal balance between cartilage formation and destruction, leading to progressive joint damage and loss of function [24].

Knee Osteoarthritis primarily occurs in ≥50-year-old individuals. It is a chronic degenerative joint disease that clinically manifests as pain, joint deformity and limited mobility that typically causes disability [25]. With the acceleration of population ageing and the increase in the proportion of obese individuals, osteoarthritis is the 11th leading cause of disability worldwide and ranks 38th among disability factors that affect life expectancy [26]. In developed regions, such as North America, Western Europe, Japan, Australia and New Zealand, the prevalence of osteoarthritis is ~22.0% in men aged ≥80 and 30.3% in elderly women; in the Western Pacific region, the corresponding prevalence rates are 13.0 and 20.5%, respectively, with prevalence

increasing considerably in individuals aged ≥45 (14.1% for men and 22.8% for women) [27,28]. Prevalence rate is notably higher among women than men, especially in the population aged ≥60 years (10.0% for men and 37.3% for women) [29].

With rapid increase in the elderly population of China, the incidence of osteoarthritis has risen. Besides causing physical pain and dysfunction, osteoarthritis leads to an increase in anxiety, helplessness, depression and social barriers at both social and psychological level; this affects daily life, social function and quality of life of patients, brings economic burdens and pressure to families and social healthcare and poses a challenge to social health [30, 31]. The pain and disability caused by osteoarthritis posed economic burdens worldwide, with the cost amounting to 1.0-2.5% of the gross national product in developed countries [32].

Another common osteoarthritis is hip and hand but depending on the region, the highest prevalence has been reported in Europe and North America, with the lowest in Africa and Asia [33]. Genetic variation, body mass and lifestyle variations further demonstrate geographical disparities in the prevalence of osteoarthritis [34].

Osteoarthritis in Pakistan

Osteoarthritis is one of the primary public health issues in Pakistan, and the most important causes of musculoskeletal disability in this country, particularly in older women [35]. The prevalence of this in adults is approximated to be between 22% and 28% with the most reported being knee Osteoarthritis [36]. Research in other parts of the world like Karachi, Lahore and Peshawar reveals that 30-40 per cent of women having reached over 50 years of age are having symptomatic knee Osteoarthritis [37]. Its incidence is almost twice that of the male population, mainly because of postmenopausal hormonal alterations, obesity and reduction in muscle strength [38]. With the current trends of life expectancy, the burden of Osteoarthritis Pakistan will continue to expand, creating severe problems to the healthcare systems and impacting the quality of life of the aged groups [39].

Nonetheless, the Quality of Life of female Osteoarthritis patients is not a standard practice in most healthcare facilities, and as a result, there are knowledge gaps in the evaluation of their physical and emotional needs [40]. The evaluation of Quality of Life can be of great benefit to clinicians trying to offer patient-centered care and to the policymaker creating prevention and rehabilitation programs of higher quality [41]. The relevance of the study in question lies in the fact that the assessment of the Quality of Life of female Osteoarthritis patients has not been a major topic in the past, thus future research is required to determine the factors that have the most substantial impact on the

wellbeing of these patients and design more efficient management strategies.

Conclusion

Thus, Osteoarthritis is the most prevalent cause of chronic pain and disability in women, especially in the population of postmenopausal and elderly. The concept of Osteoarthritis is not only about physical, emotional, and social issues, hence, the concept of Quality of Life in this population is important to determine.

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