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Osteoarthritis: New problem of new era

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Abstract

There are so many musculoskeletal rheumatoid arthritis, diseases like osteoarthritis osteoporosis, (OA), spondylitis, gout and many more, but from all of these diseasesosteoarthritis musculoskeletal is the communal condition. Osteoarthritis causes pain, tenderness, inflammation, swelling, stiffness and cartilage degradation. It is the fourth most frequent bone disorder in the world. OA affect person physically and mentally. So, the aim of this review paper is to show the effect of OA, economic burden of OA and risk factors which are involve in progression of OA so that it will be clear how OA affecting life of people.

Keywords

Osteoarthritis (OA), cartilage, articular cartilage, matrix component, degenerative, cartilage loss, joint pain, obesity, nutrients, genetics, body mass index, gender, economic burden, progression, triggers, disability, worldwide burden.

Introduction

Musculoskeletal disorders are a diverse group of patho physiological conditions which creates many problems which develop severe lifelong disorders like rheumatoid arthritis, osteoarthritis (OA), osteoporosis and lower back pain. Among all these problems OA is the second most frequent joint related problem seen in medical practice. Osteoarthritis (OA) is a disease of worsening of joint which cause from failure of joint cartilage and original bone (Arden et al., 2015). Osteoarthritis is beginning by the load and stress on the mechanism of joint and its process of inflammation, then it continues as cartilage loss and then underlying bone becomes affected. Person complaint about joint barring and joint uncertainty and because of this ache and rigidity

their daily activities got affected (Sinusas. 2012). Osteoarthritis is a process in which formation of whole joint got affected. Sometimes bone and cartilage fragment float between the spaces of joints that can cause irritation and also and pain damage the surrounding tissues (Haq et al., 2003). This is a disease of articular cartilage but it implicates the entire joint, loss of articular cartilage is only a primary change, but there is so many other secondary changes also which involves in OA. The structure of normal articular cartilage contains extracellular matrix which is actually a collection of water, collagen, proteoglycans and chondrocytes (Goldring et al., 2009). In osteoarthritis chondrocytes fail maintaining the natural process of homeostasis so it starts ruining these components. After articular cartilage subchondral bone affected. In osteoarthritis sub chondral bone structure changes. Bone marrow lesions are also accountable for cartilage damage because it has deteriorating lesions (Taljanovic et al., 2008). In become osteoarthritis meniscus intolerable for loading and force effect during ordinary create on joint movements). This is how it is clear that how entire joint is affected in OA and can make an individual life worse.

Effect of OA on individual life

Osteoarthritis is known as the disease which create cartilage loss and severe joint deteriorating

disorder. The most involved joints are finger of hands and thumb, knee, hip joints, neck and lower back. OA has 2 types primary and secondary. Primary OA is not related to any injury but it is age based and secondary OA is result of injuries, metabolic disorders and trauma etc. (Donahue, 2018; Krishnan et al., 2018). OA effect a person physically in the form of joint pain, mostly knee OA (Cross et al., 2014), physical restrictions which leads to dependency difficulty in sleep (Power et al., 2008; Hawker et al., 2010), depression (Hawker et al., 2011; Sale et al., 2008). Over 25% population of 18 years-old affected by this disease and patients are over the age of 50 complain shirt and inflexibility in the affected joint, which is sometime increase and decrease with motion and relaxation. Typically, in morning stiffness only continue for 30 minutes or less than that and patient also experience crackling sound when they move affected joint, it happens especially with shoulder and knee joint.

OA is also affecting people mentally. It affects the patient mood and fighting spirit. Depression is the most common in OA and it is 20-25% in total population (Wright et al., 2013).

This is clear that not only physically but osteoarthritis affects a person mentally and a person can become depressed because he or she are not able to perform even small work which affect them badly. Osteoarthritis can make individual disable if not controlled and also it is irreversible in nature so it is necessary to prevent the causes of OA so that person can live their life with complete health.

Triggers for OA

There are so many factors which trigger the progression of osteoarthritis in people or the factors which are the reason of osteoarthritis and if cannot be controlled they make person life worse day by day and he or she cannot even perform daily chaos.

Genetics is responsible reason for OA and 40% knee OA and 65 % hand and hip OA cases supposed to be genetic (Spector et al., 2004).Five chromosomes (2p, 2q, 7p, 11q and 16p) are the

carrier for the genes which are involved in OA process.

Obesity which is generally described as body mass index, also a associate factor for OA. Knee OA risk increases 35% when 5 units in BMI increase (Jiang et al., 2012).

Physical activity is also associated to early onset of OA in people. Activities that include squatting, kneeling, climbing stairs, heavy lifting, floor activities are progressive reasons of OA. Those people who are playing intense games are on risk to have knee osteoarthritis.

Diet is also a reason for risk progression of OA. High level of dietary fat (saturated fatty acid) is associated with cartilage change. Low density lipoprotein (LDL) cholesterol influence OA. Vitamin D level is also positively associated with OA, It promote bone mass and stop bone loss so it is advised to consume vitamin D supplementation to prevent fractures and even OA). Some nutrient can also increase osteoarthritis which includes low level of vitamin D,

Several authors assumed that unusual hormonal process an develop OA in people but results are contradictory (Klerk et al., 2009). Estrogen hormone affects the joint tissue and cartilage. Articular tissue maintains their homeostasis with the help of estrogens and this is why estrogen estrogens deficiency influence the risk of OA.

As it is seen that there are many factors which can trigger the progression of OA, so it is necessary to control these factors so that people can live freely without the fear of OA in their life.

Worldwide burden of osteoarthritis

Osteoarthritis being an easily seen variety of arthritis and it disturbs 237 million people's life and 2% of year lived with disability is also caused by the same. It affected 10% of males and 18% of females .80% people who have OA having problem

in motionand 25% of them are not able do their dayto-day activities (WHO, 2012). In majority people age of 65 were detected with bodily changes in more than one joints (Jordan et al., 2007; Andrianakos et al., 2006).

In 2010, it is supposed that 250 million people had knee OA (Cross et al., 2014; Vos et al., 2012)in which hip OA affects about 0.85% population. In 2004, disability caused by OA in 43.4 million people globally. Between the 291 worldwide diseases which create disability knee and hip osteoarthritis ranked 11th (Cross et al., 2014). In year 2012, 52.5 million people of United States got affected by osteoarthritis, and50% of them are 65 years or older, and in this age only 60% of people have symptoms and other 80% population only have radiographic indication of OA. .It is supposed that by 2040 78 million adults will be suffers from OA in United States (US).

In 2011, 964,000 people were hospitalized due to OA in US, and from 10,000 population 31% keep staying (Pfuntner et al., 2013).

The reports of Global Burden of Disease Study, 2017 shows that the cases of OA were 3,752 per 100,000 in 2017, and that was 9.3% increased rate from 1990. People who are older than 60 years, 10-15% of them have some symptoms of OA, it is predicted that by 2050, 130 million people will have OA and 40 million peoples get disabled because of same (Lim et al., 2011). It is assumed that for the people more than age of 40 years OA will become a cause of physical limitation globally OA is hiking 5%. Now OA is not only for elderly people in America 27 million people 25 years and older affected from this disease. Prevalence of knee OA in India remained 28.7% and beside this a large percentage of population is suffering from borderline OA (Chandra et al., 2016).

Economic burden of osteoarthritis

From all the conditions because which patient stay in hospital OA got the second place in most costly condition in U.S. hospital in 2011 with over all charge of \$14.8 billion with \$15,400 per stay. The payers said that it was also the most expensive condition they pay to insurance (Torio et al., 2013). It is supposed that 82.9% patients with osteoarthritis investigate test for once in 6 month and 7.9% OA patients buy pills and other aids in daily life for OA. Total cost for OA in 6 months was US\$ 2456. 30.7% people were unable to do chores, and 3.6% of the patients had to take leave from work in these six months because of their condition. 15% of annual costs for OA only went on pain killers. People with worse condition will done joint replacement surgeries which costs are expected to be around US\$ 25000 (Bitton, 2009).

In India, patient of OA is supposed to double by 2020, in that way it is obvious to increase the economic burden of OA (Mohammad et al., 2014).

INR 11521 is the total cost for per OA patient, which includes medical charges INR 8713 and nonmedical charges INR 2808. And indirect cost for per OA patient was INR 8998. The sum of direct and indirect cost was INR 20519. Total direct cost was 56% and indirect cost was 44% (Vankatagiri et al., 2018).

So, it is clear by the above discussion that how it also creates economic burden on the person and it is hard for everyone to cope with all this cost for treatment and that is why not everybody gets the treatment for the same. So, it is important to understand the root cause and control it so that it will not became an economic problem for anyone in their life and they can live their lives freely.

Conclusion

Osteoarthritis becomes a major problem in this new world. There are so many factors which can trigger the progression of OA. In this review paper worldwide burden of OA and the burden which is affecting people economically, how people are affected by OA mentally and physically and the factors which are responsible for progression of OA were discussed and by the discussion it is clear that OA is and will become the reason for years lived with disability and burden to people physically and financially. So, the aim of the discussion in this review paper to raise awareness that how osteoarthritis become a new problem in this new era and how it affects the people day to day life physically, mentally and economically too, so it is necessary to work on the trigger of OA so that it can be control and will not be a reason for disability in future.

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