Openventio PUBLISHERS

OSTEOLOGY AND RHEUMATOLOGY

Open Journal

http://dx.doi.org/10.17140/ORHOJ-1-105

Mini Review

*Corresponding author
Abdulrazzaq Alobaid, MD, FRCSC
Chief of Spine Surgery and Orthopedic Casualties
Alrazi Hospital;
Chairman of Faculty Orthopedics and Post Graduate Training
Kuwait Institute for MedicalSpecialization (KIMS)
Orthopedic Spine Surgeon
Canadian Board Certified
P.O. Box 1160
Surra 45712, Kuwait
E-mail: dralobaid@hotmail.com

Volume 1 : Issue 1
Article Ref. #: 1000ORHOJ1105

Article History
Received: June 25th, 2016
Accepted: July 26th, 2016
Published: July 27th, 2016

Citation
Alobaid A. Cultural adaptation for common orthopedic disorders pathology and presentations with focus on Middle Eastern and Asian patients. *Osteol Rheumatol Open J*. 2016; 1(1): 14-16. doi: 10.17140/ORHOJ-1-105

Cultural Adaptation for Common Orthopedic Disorders Pathology and Presentations With Focus on Middle Eastern and Asian Patients

Abdulrazzaq Alobaid, MD, FRCSC*

Chief of Spine Surgery and Orthopedic Casualties, Alrazi Hospital; Chairman of Faculty Orthopedics and Post Graduate Training, Kuwait Institute for Medical Specialization (KIMS), Orthopedic Spine Surgeon, Canadian Board Certified, P.O. Box 1160, Surra 45712, Kuwait

Globalization has gone parallel to the evolution of the human societies. The current migration and immigration trends towards high-income countries resulted in societies with multi-ethnic backgrounds. This resulted in the introduction of diseases and pathology not commonly encountered among those societies, placing challenges on the medical communities and treating physicians. Thus, it is essential for the medical communities to appreciate and understand the cultural differences. A brief overview on common orthopedic issues and the variation among different ethnic groups.

KNEE AND HIP OSTEOARTHRITIS (OA)

Osteoarthritis (OA) is characterized by focal areas of loss of particular cartilage. Clinically, the condition is characterized by joint pain, limitation of movement, occasional effusion, and variable degrees of local inflammation. It can occur in any joint but is most common in the hip; and knee. It's considered a degenerative process and in some cases it is the result of some types of inflammatory arthritis. Worldwide estimates are that 9.6% of men and 18.0% of women aged ≥60 years have symptomatic osteoarthritis.[1]

The question is, are there variations according to population background and ethnic group? And if so, how does it influence management? In general, OA is more prevalent in Europe and the USA than in other parts of the world. Studies have shown that African-American women are more prone than white women to OA of the knee but not of the hip. OA of the hip occurs more often in European whites than in Jamaican blacks, African blacks, or Chinese.[2] People of Indian and African Caribbean origin have a lower prevalence of OA hip than people of European Caucasian origin. African-American women have a higher prevalence of OA knee than American Caucasians.[3] When it comes to inflammatory arthritis shows differences among different ethnic groups. For example, it was suggested in one study that the prevalence of rheumatoid arthritis (RA) is lower in people of Pakistani and African Caribbean origin than in European Caucasians.[4] Thus, it's fair to say that in general, hip OA is more common in Caucasians, and knee OA is more common among Asians and Africans.

There are several studies to suggest differences between the East and West parts of the world. For example, the prevalence of OA appears to vary between ethnic groups. With respect to hip joints, OA is more common in Caucasians than in Japanese.[5-7]

Several explanations were provided to explain these variations including: genetics, lifestyle, environmental factors, etc. Other potential explanations for a racial difference in hip and knee OA include differences in physical activities, a lower prevalence of obesity in certain populations like Chinese. Moreover, there are cultural lifestyle differences like squatting, which are a traditional resting and working posture in some parts of Asia and are required

http://dx.doi.org/10.17140/ORHOJ-1-105

for the use of non-Western toilets. Squatting utilizes an extreme range of motion that may engage areas of hip cartilage that are not loaded during upright stance.[6] This may increase loads on the knees but minimizes loads on the hips. That's one of the reasons that total knee replacement is commoner than total hip arthritis among Asian population. This is of great importance in outcome results and patients expectations. These types of patients would not accept total joint replacement surgeries that would limit their ability in squatting postures.

Moreover, it seems that there are anatomical variations among different ethnic groups. Most of the existing commercial implants are designed to suit the knee anatomy of the Western population. Studies have shown that the smaller build and stature of the Asian-Pacific population gives rise to geometric mismatch between patient anatomy and implant components.[8,9] This fact has to be taken in consideration by surgeons and implant industry.

SPINE

Back pain is very common worldwide like joint arthritis, it seems it's affected by ethnic background. In one report it was noticed that back pain was 20% more common in African Caribbean, 60% more common in Indians and 50% more common in Pakistanis and Bangladeshis than in European Caucasians.[3]

There are several conditions that affect the spine whether degenerative or inflammatory. Looking at ankylosing spondylitis (AS) as for example, it was suggested that AS is less common in people of Indian and African origin than in European Caucasians.[3] While it's almost rare in the Middle East region.

There were not enough data to compare degenerative spinal disorders to different ethnic groups. But like joint arthritis, in some Asian populations it would affect the outcome if the surgical management affects patient's future ability to perform squatting or floor sitting.

Spinal deformity is pathology not uncommon in the pediatric groups called scoliosis. Congenital scoliosis is one type of scoliosis which is relatively rare, but seen more frequently in some parts of the world where consanguinity marriage is common. Consanguinity increases the risk of genetic disorders. Although the current advances in medical diagnosis enables early diagnose lots of congenital conditions during pregnancy, in some religions and cultures it would not be acceptable to perform a therapeutic abortion. This results in increasing number of congenital scoliosis cases seen in countries like the Middle East region.

Of interest is the new wave of spinal tuberculosis (TB). This became more obvious among new cases of immigrants to Europe. TB is a chronic granulomatous disease. In humans it is caused by bacteria of the *Mycobacterium tuberculosis* complex, and it usually affects the respiratory system, but less commonly the spine. This new wave of spinal TB places challenges on the medical community that is not used to the management of these cases. Even with current treatment modalities, there is a new wave of drug resistance TB with non-classical presentations. For example, spinal TB classically describes a pathology spreading beneath the anterior longitudinal ligament sparing the disc, now we see cases involving both the disc and vertebral bodies. A multicenter studies would be required to analyze this new wave of spinal TB and update the management plan.

HIP FRACTURE

This is a common injury among elderly population following domestic falls. Osteoporosis is claimed to be one of the major factors contributing to bone fragility resulting in increasing number of hip fractures. It was was shown that the rates of hip fracture are higher among European Caucasians than among those of African Caribbean origin. The rates in those of Asian origin are intermediate between the other two ethnic groups.[3] More studies are required to drive a better conclusion on the current trends and numbers worldwide.

CONCLUSION

It is of great importance to consider the differences in patient's ethnic group and cultural variations in the management of such conditions. The implant designs should take into consideration the different anatomy variations worldwide. Cultural expectations in the management of some conditions should be taken into account and should be discussed with patients. If, for example, a patient uses non-Western toilets with squatting position ends up with total knee replacement, this patient would have a poor outcome simply due to the fact that this would affect negatively his daily activities. More studies would be required to compare prevalence and outcome taking into account ethnic variations. The health community must engage more directly in current research and policy on globalization and encourage values that promote human health.

REFERENCES

1. Murray CJL, Lopez AD. *The Global Burden of Disease*: *A comprehensive Assessment of Mortality and Disability from Diseases, Injuries, and Risk Factors in 1990 and Projected to 2020*. Cambridge, MA, USA: Harvard School of Public Health on behalf of the World Health Organization and The World Bank; 1996.

2. Anthony D. Burden of major musculoskeletal conditions. *Bull World Health Organ.* 2003; 81(9): 646-656. doi: 10.1590/S0042-96862003000900007

3. ARC publication. Arthritis - The big picture. 2002.

4. Silman AJ, Hochberg MC. *Epidemiology of the Rheumatic Diseases*. 2nd ed. NY, USA: Oxford University Press; 2001: 9.

http://dx.doi.org/10.17140/ORHOJ-1-105

5. Ota H. Prevalence of osteoarthritis of the hip and other joints in Japanese population. *J Jpn Orthop Assoc*. 1979; 53: 165-180. Web site. http://europepmc.org/abstract/med/429821. Accessed June 24, 2016

6. Kellgren JH, Lawrence JS. Osteoarthrosis and disc degeneration in an urban population. *Ann Rheum Dis.* 1958; 17(4): 388-397.

7. Inoue K, Hukuda S, Fardellon P, et al. Prevalence of large - joint osteoarthritis in Asian and Caucasian skeletal populations. *Rheumatology*. 2001; 40(1): 70-73. doi: 10.1093/rheumatology/40.1.70

8. Westrich GH, Haas SB, Insall JN. Resection specimen analysis of proximal tibial anatomy based on 100 total knee arthroplasty specimens. *J Arthroplasty.* 1996; 10(1): 47-51. doi: 10.1016/S0883-5403(05)80100-7

9. Shah DS, Ghyar R, Ravi B, Hegde C, Shetty V. Morphological measurements of knee joints in Indian population: Comparison to current knee prostheses. *Open J Rheumatol Autoimmune Dis.* 2014; 4(2): 75-85. doi: 10.4236/ojra.2014.42012