

Editorial

Current Concepts in Arthroplasty[§]

This hot topic issue of the Open Orthopaedics Journal deals with current concepts and topics in arthroplasty. With contributions from the orthopedic surgeons, researchers and epidemiologists, it features a few interesting articles. The articles focus on current concepts providing a comprehensive review of some topics or addressing some controversial areas in the field of arthroplasty. Arthroplasty is one of the commonest surgeries performed for the relief of refractory pain due to severe arthritis of various etiologies and improvement in functional ability and health-related quality of life of patients [1-3]. Although a variety of demographic and clinical factors impact the outcome of hip and knee arthroplasty [1, 4-9], in general the results are excellent.

One of the articles reviews the epidemiology of knee and hip arthroplasty [Singh *et al.*]. In this systematic literature review, epidemiologic studies discussing the utilization rates of knee and hip arthroplasty and effect of important patient factors including age, gender and race/ethnicity are reviewed. With an aging population in the U.S. and other Western countries, the utilization rates of knee and hip arthroplasty are increasing. This can lead to a demand versus supply problem if the number of trained reconstructive orthopedic surgeons available fails to increase dramatically in the next few decades. The second article by Kalore *et al.* addresses a clinically, important and somewhat controversial area of diagnosis and management of infected Total Knee Arthroplasty (TKA). Infection is one of the most common underlying reasons for early TKA failure and has become the number one reason for revision TKA in the U.S [10]. A variety of new diagnostic methods including molecular studies, new diagnostic radiographic tools available in addition to the traditional evaluation with synovial fluid analysis, bone scan and acute phase reactants such as C-reactive protein and erythrocyte sedimentation rate. This article reviews the evidence supporting various diagnostic modalities and treatment approaches. Certainly more research in the coming years will help us with even a more systematic approach to diagnosis and treatment of infected arthroplasty.

In the systematic review of biomarkers related to arthroplasty by Mertens *et al.*, evidence is reviewed regarding the potential application of biomarkers to predict important outcomes after including osteolysis, aseptic loosening and infected arthroplasty. Thirty relevant studies were reviewed, with most relating to osteolysis or loosening. The study summarizes the current state-of-the-art in this field, which is clearly evolving. In another article by Dr. Sanchez-Sotelo, current state-of-the-art in shoulder arthroplasty is reviewed. The specific aspects of techniques, fixation and design, results, indications, outcomes and complications are discussed. Total shoulder arthroplasty, reverse shoulder arthroplasty and revision shoulder arthroplasty are discussed in detail with particular attention to underlying diagnoses and outcomes. Dr. Sanchez-Sotelo reviews state-of-the-art in total elbow arthroplasty in an accompanying article. This article provides a comprehensive overview of indications, outcomes, complications and issues related to technique and implant types. The two upper extremity reviews provide an up-to-date comprehensive review for practicing surgeons, residents and trainees.

It has been a privilege for me to serve as guest editor for this hot topic issue. I have enjoyed working with my esteemed colleagues in putting together this issue and have learned a lot from them in the process. With gratitude to them for their valuable contributions, I hope that this hot issue will add knowledge to the area of arthroplasty and help practicing surgeons as well as researchers.

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REFERENCES

- [1] Ethgen O, Bruyere O, Richy F, Dardennes C, Reginster JY. Health-related quality of life in total hip and total knee arthroplasty. A qualitative and systematic review of the literature. *J Bone Joint Surg Am* 2004; 86-A(5): 963-74.
- [2] Kuhn JE, Blasler RB. Measuring outcomes in shoulder arthroplasty. *Semin Arthroplasty* 1995; 6(4): 245-64.
- [3] Learmonth ID, Young C, Rorabeck C. The operation of the century: total hip replacement. *Lancet* 2007; 370(9597): 1508-19.
- [4] Hawker G, Wright J, Coyte P, *et al.* Health-related quality of life after knee replacement. *J Bone Joint Surg Am* 1998; 80(2): 163-73.
- [5] Davis AM, Agnidis Z, Badley E, Kiss A, Waddell JP, Gross AE. Predictors of functional outcome two years following revision hip arthroplasty. *J Bone Joint Surg Am.* 2006; 88(4): 685-91.
- [6] Singh JA, Lewallen D. Predictors of pain and use of pain medications following primary Total Hip Arthroplasty (THA): 5,707 THAs at 2-years and 3,289 THAs at 5-years. *BMC Musculoskelet Disord* 2010; 11: 90.
- [7] Singh JA, O'Byrne M, Harmsen S, Lewallen D. Predictors of moderate-severe functional limitation after primary Total Knee Arthroplasty (TKA): 4701 TKAs at 2-years and 2935 TKAs at 5-years. *Osteoarthritis Cartil* 2010; 18(4): 515-21.
- [8] Singh JA, O'Byrne MM, Harmsen WS, Lewallen DG. Predictors of moderate-severe functional limitation 2 and 5 years after revision total knee arthroplasty. *J Arthroplasty* 2010; 25(7): 1091-5, 5 e1-4.
- [9] Singh JA, Lewallen D. Age, gender, obesity, and depression are associated with patient-related pain and function outcome after revision total hip arthroplasty. *Clin Rheumatol* 2009; 28(12): 1419-30.
- [10] Bozic KJ, Kurtz SM, Lau E, *et al.* The epidemiology of revision total knee arthroplasty in the United States. *Clin Orthop Relat Res* 2010; 468(1): 45-51.

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