



Contents lists available at ScienceDirect

# Journal of Arthroscopy and Joint Surgery

journal homepage: [www.elsevier.com/locate/jajs](http://www.elsevier.com/locate/jajs)



Research paper

## Osteoarthritis knee: Need for a simplified prognostic knee score

Prince Raina\*, Roop Bhushan Kalia

AIIMS, Rishikesh, India

### ARTICLE INFO

#### Article history:

Received 22 August 2017

Accepted 7 November 2017

Available online xxx

#### Keywords:

Osteoarthritis

Osteoarthritis

Knee arthritis

New knee score

### ABSTRACT

Osteoarthritis is the commonest joint disorder. There may be variations depending upon the type of joint involved and amount of loading of joint. Weight bearing joints appears to have a higher predisposition as compared to other joints. The treatment modalities for symptom relief vary from nonpharmacological to pharmacological and surgical interventions. The type of intervention required depends mainly on the amount of joint destruction which can be quantified clinically and radiologically. Knee joint is one of most common joints affected in destructive pathology and taken for the most invasive procedure i.e joint replacement. Treatment choice is based on clinical evaluation, radiological changes and patient specific scores. Osteoarthritis of knee can be primary or secondary and symptoms complex can be quantified using various scales like WOMAC, HSS, KOOS, OKS and KSS. The radiological criteria of Kellgren and Lawrence can be applied to assess the extent of destruction. The two extremes of all criteria explains the normal and worst conditions. No criteria explains the amount or the type of intervention needed for a particular stage of disease. All criteria being nonuniform and diverse. The other most important thing being difficult utility and tedious scoring system. The present need is a single, easy, clinically validated scoring system which combines clinical, radiological and patient reported variables which can guide treatment interventions and has the ability to prognosticate the disease. New score (KALIA AND RAINA Score) can be recognised as a new assessment tool in evaluating a patient for osteoarthritis knee in future.

© 2017 Published by Elsevier, a division of RELX India, Pvt. Ltd on behalf of International Society for Knowledge for Surgeons on Arthroscopy and Arthroplasty.

### 1. Introduction

Osteoarthritis of knee is the result of physiological change occurring in the joint and causing unwanted symptom complex that correlate poorly with the disease. About 13% of women and 10% of men aged 60 years and older have symptomatic knee OA.<sup>1</sup> The proportions of people affected with symptomatic knee OA is likely to increase due to the aging of the population and the rate of obesity/overweight in the general population.<sup>1</sup> Females, particularly those  $\geq 55$  years, tended to have more severe OA in the knee.<sup>2</sup> The structural determinants of pain and mechanical dysfunction is explained by multiple interactive pathways.<sup>3–6</sup>

The pathological cascade involves decrease in water content of joint cartilage, fibrillations of joint cartilage and destructive changes in cartilage architecture, abnormal bony osteophytes and bony spurs. The symptoms worsen with increasing age and

cause a chronic morbid condition. The predisposition is higher in cases with previous joint inflammatory or infective pathology, trauma, chronic abnormal stress and irregular loading of joint. African Americans had slightly higher prevalence of knee symptoms, and symptomatic knee OA, and significantly higher prevalence of severe radiographic knee OA compared to Caucasians.<sup>7</sup> The pathological changes can be quantified in terms of clinical and radiological criteria. Radiographic criteria were proposed by Kellgren and Lawrence in 1957<sup>8</sup> and those criteria were later accepted by the World Health Organization at a symposium held in Milan in 1961.<sup>9</sup> Lequesne has proposed sets of clinical criteria for OA in several specific joints.<sup>10,11</sup>

Numerous classifications are available to quantify the disease in terms of either symptoms and signs or radiological aspect of disease. The literature shows some scales being practiced to grade knee osteoarthritis includes WOMAC, KOOS, OKS, HSS, KSS and K-L system. Review of scores shows difficult in utility, less practical applicability, difficult to remember, uneven group and subgroup score and unspecified treatment guidance.

\* Corresponding author.

E-mail addresses: [Praina54@gmail.com](mailto:Praina54@gmail.com) (P. Raina), [roopkalia2003@yahoo.com](mailto:roopkalia2003@yahoo.com) (R.B. Kalia).

<http://dx.doi.org/10.1016/j.jajs.2017.11.001>

2214-9635/© 2017 Published by Elsevier, a division of RELX India, Pvt. Ltd on behalf of International Society for Knowledge for Surgeons on Arthroscopy and Arthroplasty.

The present study aims at designing and assessing the utility analysis of a new scoring system for osteoarthritis knee which includes the criteria of a ideal scoring system.

- Complete assessment of pathology which includes patient specific complains or parameters, Physician specific assessment or examination findings, radiological grading of pathological process and type of modality needed to treat a particular stage of disease.
- It should be easy to remember and use. It must have easiest possible practical utility in assessment of the disease and can be applied in a minimum possible time.
- It should be widely applicable to all group of populations.
- It must have minimum possible interobserver variability.
- It must have both internal and external validity.

New score (KALIA AND RAINA score) can be recognised as a new assessment tool in evaluating a patient for osteoarthritis knee in future.

1.1. WOMAC score

Western Ontario and MacMaster Universities Arthritis Index (WOMAC),<sup>12–14</sup> is a widely used set of questionnaire used to evaluate the condition of patient with knee arthritis, chiefly a patient rated scale. Its drawbacks include lack of physician rating, radiological and treatment component involved. The parameters being assessed are pain, stiffness and physical function. Involved parameters are further divided into multiple subgroups. Although the scale has classified many aspects of knee arthritis it lacks uniformity in grading of parameters and is difficult to remember and most important no radiological component involved and no treatment modality is taken into consideration.

1.2. KOOS score

Knee Injury and Osteoarthritis Outcome Score (KOOS),<sup>14</sup> is a patient based knee score to quantify the arthritic pathology. Lack of physician assessment, radiological aspect and treatment modality involved is one of important deficient factor. The components studied involves symptom complex, pain, function of daily living, functions of sports and recreational activities and quality of life involved. The score is being further complicated by dividing each parameter into non-uniform dimensions like symptom complex into five dimensions, stiffness into two dimensions, pain into nine dimensions, function of daily living into 17 dimensions, function of sports and recreational activities into 5 dimensions and quality of

life into 4 dimensions. The score is very difficult to be utilized even in professional hands.

1.3. OKS score

Oxford Knee Score (OKS),<sup>12,15,16,17</sup> another knee is used to grade the knee function and is patient reported score with no physician specific, radiological and treatment specific modality involved, thus lacks the qualities of an ideal scale. The twelve parameters being assessed are all patient specific questions. The scale shows some uniformity but lacks the quality of assessing the disease load completely by omitting physician and radiological assessment and treatment modality to be needed for cure.

1.4. HSS score

Hospital for Special Surgery Rating System (HSS),<sup>18</sup> devised a knee arthritis scoring system which is chiefly a patient and physician specific criteria. The scale involves total five parameters with two patient specific parameters- pain, functional limitation and three physician specific parameters- tenderness, impingement and range of motion. No component of radiological assessment and ideal intervention needed is explained, thus lacking the criteria of an ideal scoring system. The score also appears to be non-uniform as there is uneven distribution of each parameter included in score.

1.5. KSS score

Knee Society Score (KSS),<sup>12</sup> a widely prevalent and commonly used scoring system is a patient and physician based system. Parameters being assessed are pain, range of motion, stability. Each being further divided with 50 points for pain, 25 points for range of motion and 25 points for stability. As like other scales it lacks the radiological assessment and does not guide the modality of treatment appropriate for the stage of the disease.

1.6. K–L system

Kellgren and Lawrence Grading System,<sup>8</sup> is a radiology based assessment system adopted in 1957 to quantify the pathological burden. The severity grades ranges from 0 to 4 with increasing severity of radiological changes. Grade zero is normal joint with no pathological involvement. Grade 1 and grade 2 involves findings of joint space narrowing and osteophyte formation with “Probable or Possible” and “Definite” terminology used for grade1 and 2 respectively. Grade 3 and 4 are further aggravation of disease

**Table 1**  
Knee scores with Assessment Parameters and possible limitations.<sup>12–18</sup>

Parameters	WOMAC	KOOS	OKS	HSS	KSS	K–L
Patient specific	Pain, Stiffness, Physical Function	Symptoms, Pain, Function, Quality of life	Pain, Physical activity	Pain, Function	Pain	–
Physician specific	–	–	–	Tenderness, Impingement, ROM	Stability, ROM	–
Radiological, Parameters	–	–	–	–	–	Osteophytes, Joint space narrowing, Bony deformity
Suggested Treatment, Modality	–	–	–	–	–	–
Limitations	No physician assessment, No radiology assessment, No treatment guidance	No physician assessment, No radiology assessment, No treatment guidance	No physician assessment, No radiology assessment, No treatment guidance	No radiology assessment, No treatment guidance	No radiology assessment, No treatment guidance	No patient assessment, No physician assessment, No treatment guidance

Download English Version:

<https://daneshyari.com/en/article/8719145>

Download Persian Version:

<https://daneshyari.com/article/8719145>

[Daneshyari.com](https://daneshyari.com)