



Early knee osteoarthritis – definition, pathogenesis, diagnosis, treatment, and prevention

Between 2015 and 2050, the World Health Organization (WHO) estimates that the proportion of the world's population over 60 years will become nearly double from 12% to 22%. WHO also proposes that osteoarthritis (OA) is one of the most significant causes of disability, emphasizing the requirement of comprehensive public health action on the fundamental shift for ageing and health. Knee OA (KOA) is one of the main problems for the aged-society in terms of incidence, impairment in the quality of daily living (QOL), and economics. At present, since KOA is a specific disease which human being is not avoidable with ageing, the early diagnosis, treatment and prevention is the main focus for aged-society. The purpose of this special issue of *Annals of Joint* was to present the definition, pathogenesis, diagnosis, treatment, and prevention of the early KOA.

Kanamoto *et al.* introduced two proposals of the definition of early KOA of the Italian Rheumatology Association International and the First International Early OA Workshop. They stressed the significance of the diagnosis and treatment of the early KOA before the destruction of the knee joint. We showed that symptoms of early KOA might be a combination of pain and the disturbance of activity of daily livings (ADLs) with weak knee extension muscle strength in at residential health examinations.

Regarding the diagnosis of the early KOA, Kumahashi *et al.* reviewed the published articles about ultrasonographic (US) evaluation of KOA. They concluded that the US is a promising technique for clinical screening of the early KOA. Additionally, Nagai *et al.* introduced the criteria of MRI on the early KOA and present developments on the semi-quantitative and quantitative measure of the MRI findings. They concluded that the development of MRI might support for the investigation of intervention effectiveness at the early KOA.

For the management of the early KOA, Chiba *et al.* reviewed papers on non-surgical and surgical management of early KOA, showing the lack of strong evidence about how to manage the early KOA patient properly. However, they hoped the ongoing research would offer strategies for proper management of the early KOA.

Moreover, Takawa *et al.* introduced the genome-wide association study (GWAS) to detect the early KOA defined by the US in a cohort (Shimane COHRE study). They stressed the use of the knowledge of orthopaedics and genome medicine is necessary to reveal the aetiology and pathogenesis of KOA.

Finally, we hope that this particular issue can stimulate research minds among the readers, to define, diagnose, manage, and prevent the early KOA.

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