



## A New Approach to Treatment of Patellar Chondromalacia; Intra-Articular Injection of Hyaluronic Acid

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### Dear Editor,

Patellofemoral joint pain is the most common knee disorder worldwide (1). It is often diagnosed as chondromalacia patella in the absence of radiographic evidence of osteoarthritis (2). It affects 25% of the general population and accounts for about 10% to 40% of all musculoskeletal complaints and 20% to 40% of all knee problems (3). It most often occurs in active persons, athletes, and military personnel (1). The most common symptom of anterior knee pain is diffuse pain, which is usually found in the retro-patellar region<sup>4</sup> exacerbated by activities such as squatting, climbing the stairs or prolonged sitting with the knees flexed (1). Extending the knee against resistance can also cause pain and they mention feelings of instability during weight-bearing (4).

Patellar chondromalacia treatment aims to relieve pain in the acute phase, improve patellofemoral tracking, and recover patients to the highest possible level of functioning (5). Alternatively, physical therapy is undertaken to improve the strength and flexibility of the lower extremity and core muscles (5). Non-steroidal anti-inflammatory drugs (NSAIDs) are only useful for short term pain relief (5). In addition, ice application can be effective for pain reduction (5). Application of ultrasound, iontophoresis, phonophoresis or electrical stimulation in patellar chondromalacia treatment is not supported by any empirical evidence so far (5, 6). Surgery will be recommended if all previous treatment methods fail (5). Non-surgical treatments as mentioned before are limited and focused on physical therapy and modalities. Hyaluronic acid (HA) is an intra-articular injectable drug used to treat osteoarthritis in the knees (2). It acts on pain through a double action of anti-inflammatory and synovial fluid (SF) visco-

supplementation (7). Although few studies exist on the efficacy of hyaluronic acid injections in the treatment of patellofemoral pain, some data suggest that it can be useful in improving pain scores (6, 7).

We hypothesize that injection of HA combined with physical therapy will reduce pain, improve function, and muscle strength in patients with patellar chondromalacia. Our diagnostic package consists of clinical examination and the osteoarthritis is excluded with radiography, and the grading of the patellar chondromalacia is confirmed with MRI. Once the patellar chondromalacia is confirmed in the aforementioned assessments, the treatment will be started by intra-articular hyaluronic acid injection for three-time intervals in a week combined with physical therapy and quadriceps muscle strengthening program. Before beginning the treatment, patellofemoral pain and dysfunction will be evaluated with Samsung Medical Center (SMC) patellofemoral scoring system (3). The SMC score will be re-evaluated twice, two weeks and two months after the last injection. The grading of chondromalacia will be re-assessed with MRI two months after the last injection.

Due to the high prevalence of patellar chondromalacia among young active individuals, the effective treatment of them can improve their wellbeing and hence improves their occupational performance in the society. The injection of HA in patients with patellar chondromalacia may reduce pain, improve function and muscle strength, and also is preventive for advanced degenerative changes in the knee joint. Nevertheless, this is not yet conclusively supported by empirical evidence. As a take-home message, intra-articular injection of HA followed by physical therapy can be a relatively safe and efficient method of conservative treatment in patients with patellar chondromalacia.

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