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## ANTERIOR KNEE PAIN IN ATHLETES

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**Introduction**. "Anterior knee pain" expresses a vague localisation of the painful area and is not a clear diagnosis. Witvrouw et al. (2000) call it a "wastebasket" term. Exact differentiation of the underlying pathology is necessary to establish an optimised treatment. It was Outerbridge 1961 who stated, that the aetiology of chondromalacia of the patella is misunderstood. This statement is still true nowadays.

Epidemiological data show that running induced injuries consist mainly (30%) of anterior knee pain. Anterior knee pain develops load associated.

Aetiology of "anterior knee pain" has been suggested to be associated with internal conditions such as patellar malalignment or malformation, foot pronation and torsional anomalies. External overload in training is another important factor. Patellar insertional tendonitis is known as "jumper´s knee".

Treatment is conservative in general, but often the degenerative process is progressive.

It has only been a few years ago that extracorporeal shock wave therapy (ESWT) was introduced to treat insertional tendopathic lesions like plantar fasciitis or tennis elbow. ESWT results for "jumper´s knee" are not available up to now.

The purpose of this presentation is therefore to give an overview of the anterior knee pain entity and to evaluate ESWT effects on "jumper´s knee".

**Methods and Material**. A prospective study was performed on 35 athletes with jumper's knee. Only patients after failed conservative therapy during 3 months preceding ESWT, with at least 2 different treatment approaches, resulting in an indication for surgery were included. Patients were treated in five sessions with 2,000 impulses, each using the Swiss DolorClast® device (EMS, Konstanz/Germany) which generates radial shock waves. The most painful point at the patellar tip was localised by biofeedback. Follow up was done at 1, 4, 12, 26 and 52 weeks after radial shock wave therapy.

A specially designed pressure measurement device (DolorMeter) and Visual Analogue Scale (VAS) were used to evaluate pain at rest and during activity.

**Results**. Athletes with "jumper´s knee" had 5.2 ± 2,2 cm VAS average pain at rest prior to RSWT. One week after RSWT the average pain dropped to 2.1 ± 1,7 cm VAS and remained stable over one year ($p<0.05$). Before RSWT activity induced pain was 6.1 ± 2,4 cm VAS at an average. These value decreased to 1.9 ± 1,2 cm VAS one week after RSWT and to 1.8 ± 1,5 cm VAS one year after RSWT (both $p<0,05$). Prior to RSWT, running induced pain started after 16 ± 7,8 min of jogging activity. One week after RSWT this pain occurred after 75 ± 57 min ($p<0,05$). At one year follow up patients could run 75 ± 52,4 min ($p<0,05$) without pain.

Discussion. Radial shockwave therapy seems to be an effective, non-invasive and economical treatment method for jumper's knee in athletes. It is a successful alternative to open surgery, which normally needs 6 - 10 months to restore full sports activity (Coleman et al., 2000). Further randomised and controlled studies are necessary to underline the results of this investigation.

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