

Scientific Summary – Latest news from science

Use of unloading braces can delay or prevent surgical intervention in unicompartmental osteoarthritis

Lee PY et al. Unloading knee brace is a cost-effective method to bridge and delay surgery in unicompartmental knee arthritis. *BMJ Open Sport Exerc Med* 2017;2(1):e000195.

#04

Unloading braces are an effective, conservative treatment alternative in unicompartmental osteoarthritis compared to surgical interventions

Osteoarthritis is a degenerative disease of the knee joint with a prevalence of 23.9 %. Women are affected more frequently than men.¹ Osteoarthritis is caused by abnormal load on the articular surface.² As a surgical intervention an osteotomy (e.g. a high tibial osteotomy) can be indicated in the case of axis deformity. Depending on the disease stage and the patients' degree of suffering a total or an unicompartmental knee replacement can become necessary. Both methods are invasive and cost-effective. An alternative therapy option is the conservative treatment with unloading braces. Depending on the type and localisation of the inappropriate load unloading braces can either exert a valgus or varus pressure that can lead to relief of the according compartment and therefore, to a reduction of pain. The use of an unloading brace can be both, a short-term and a long-term cost-effective therapy option for patients suffering from unicompartmental osteoarthritis to delay or prevent a possible surgical intervention. To prove the hypothesis, Lee et al. performed a prospective, clinical trial including 63 patients with end-stage unicompartmental knee osteoarthritis for whom a surgical intervention was planned. Data was collected for a period of up to eight years.³

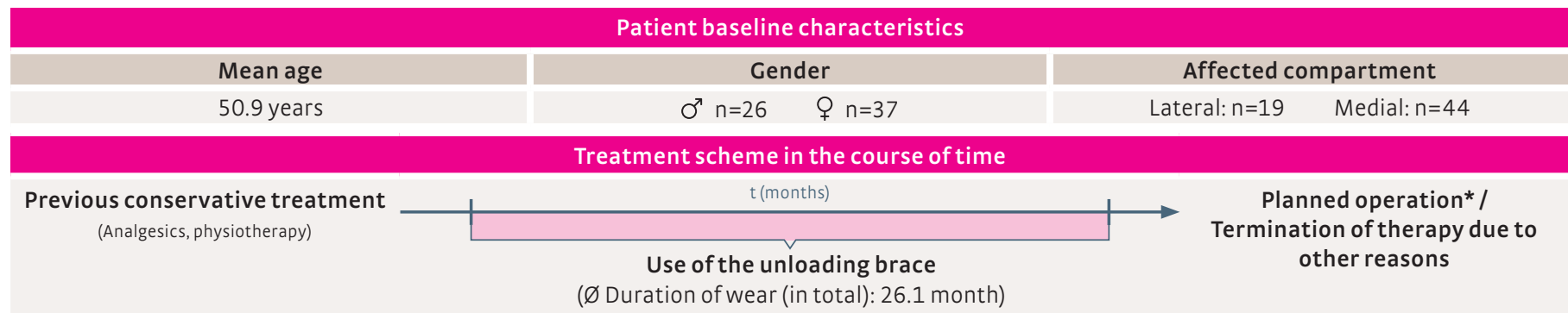
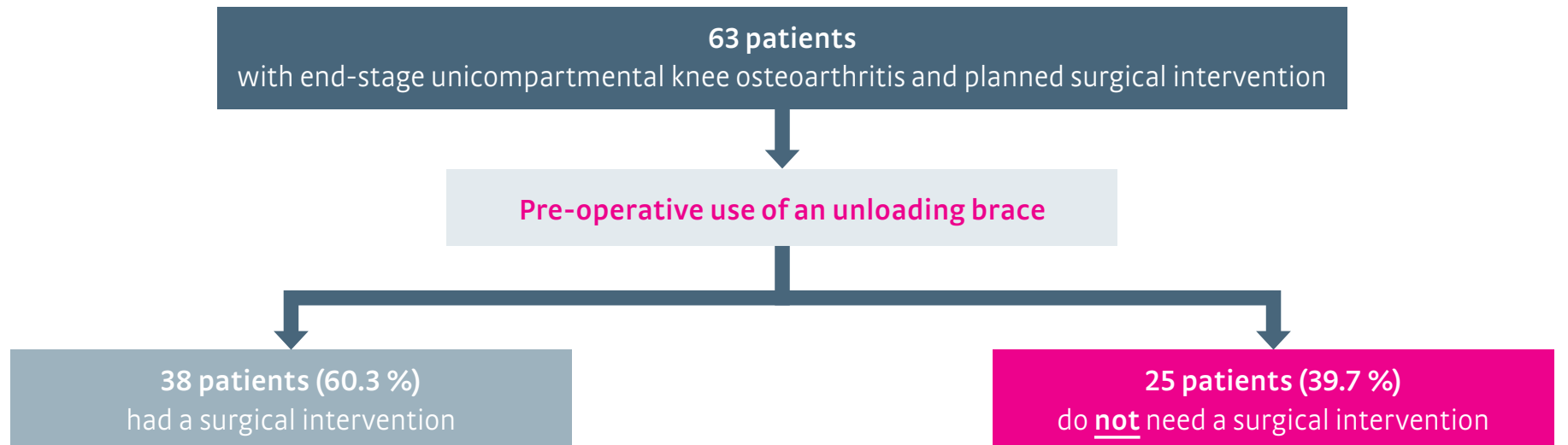


Fig. 1: Study overview

Results of the prospective clinical trial



- ➔ Already **six months of unloading brace use halved the chance for surgical intervention** compared with 3 months or less use.
- ➔ **After 24 months 25.4 % (n/N = 16/63)** were still wearing the unloading brace.
- ➔ Patients who wore the **brace for two years or more did not require surgery at eight years follow-up.**
- ➔ The average **duration of wear in the success group was 46.5 months longer than the average wear in the surgery group.**

The use of an unloading brace can delay or prevent a surgical intervention.

*Total knee replacement, unicompartmental knee replacement or high tibial osteotomy

Author's conclusion:³

- “This study suggests that **unloading knee brace** is a **cost-effective method** as a bridging therapy and **its long-term use can delay and reduce surgical intervention.**”
- “This study provides evidence that if **patients wear the brace for more than 2 years, surgical intervention is not needed.**”
- “**Short-term use of unloader knee brace can improve quality of life.**”

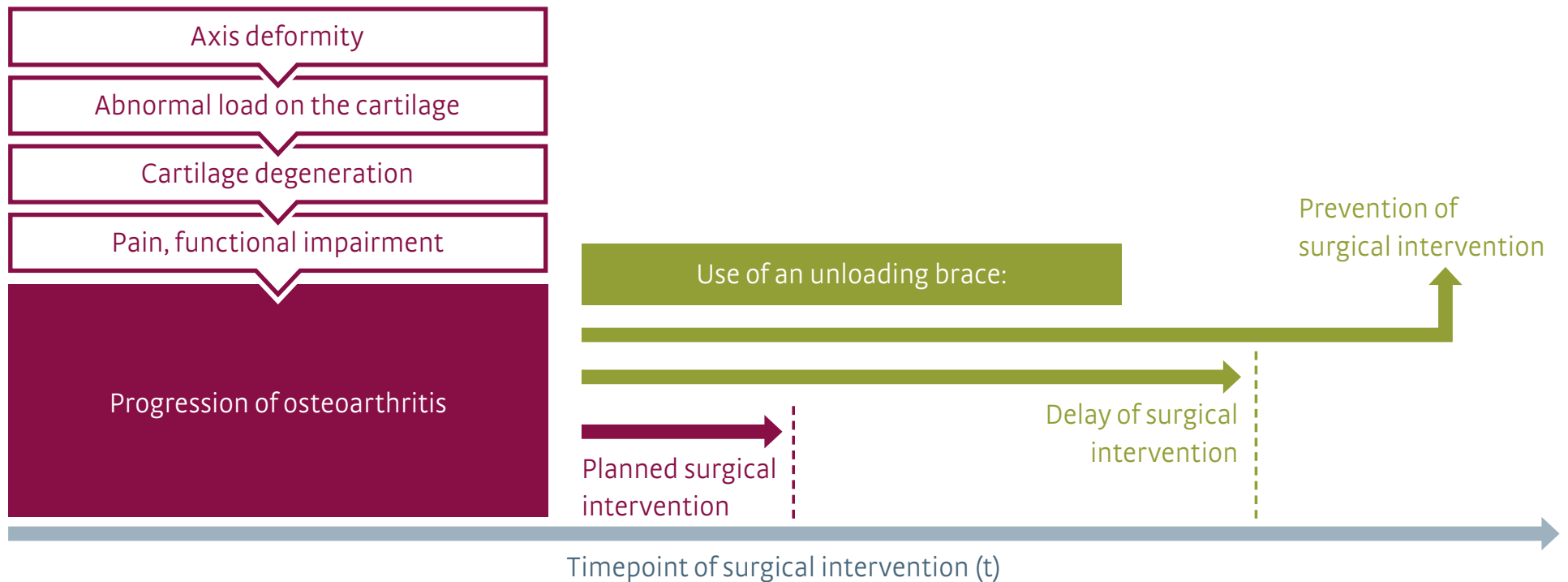


Fig. 2: Delay or prevention of surgical intervention in patients suffering from osteoarthritis by using an unloading brace (simplified diagram)

¹ Pereira D et al. The effect of osteoarthritis definition on prevalence and incidence estimates: a systematic review. *Osteoarthritis Cartilage* 2011;19(11):1270-1285.

² Segal NA et al. Bracing and Orthoses: A Review of Efficacy and Mechanical Effects for Tibiofemoral Osteoarthritis. *PM R*. 2012;4(5 Suppl):89-96.

³ Lee PY et al. Unloading knee brace is a cost-effective method to bridge and delay surgery in unicompartmental knee arthritis. *BMJ Open Sport Exerc Me*. 2017;2(1):e000195.