Sacroiliac joint dysfunction

Impact paragraph

This thesis is a comprehensive exploration of sacroiliac joint (SIJ) dysfunction and its potential interventions. It starts by examining the etiology and available treatment options, then delves into the effectiveness of minimally invasive sacroiliac joint fusion (MISJF) compared to conservative management. The research encompasses observational studies, evaluating clinical outcomes and safety post-MISJF, and investigates the impact on physical activity and motion patterns. Notably, the protocol for the SACRIFICE study introduces a multicenter randomized controlled trial (RCT), aiming to assess MISJF versus conservative therapy, with a focus on both clinical and economic effects. The thesis concludes with a prospective RCT on intraoperative SIJ infiltration for postoperative pain management. This multifaceted approach contributes valuable insights into SIJ dysfunction, considering clinical, economic, and broader management perspectives.

In addition to most current literature, it was observed that SIJ dysfunction often occurs in female patients following pregnancy and patients that suffer from Ehlers Danlos Syndrome (EDS) (**chapter three**). It is advised to evaluate the SIJ, especially in these patients who present with chronic low back pain with an unrevealing spine evaluation. A diagnostic SIJ intraarticular injection should be performed to eventually confirm SIJ dysfunction.[1,2] It is suggested that MISJF can be considered when a patient has failed conservative therapies, has persistent complaints and functional impairment. This statement is not solely based on subjective clinical outcomes, but also on short-term objective outcome measures in the form of physical activity and motion patterns with reasonable results (**chapter four, five and six**). Collecting these results is highly valuable in addition to the better-known clinical results, such as patient-reported outcome measures (PROMs). Additionally, it provides insights into the functional impact of SIJ dysfunction, offering valuable data to evaluate the effectiveness of both surgical interventions and conservative therapies. These collective findings contribute to refining the evaluation and potential diagnostic criteria for SIJ dysfunction, representing a leap forward in improving clinical approaches and decision-making within the healthcare domain.

Implementing MISJF in SIJ dysfunction treatment may not only attribute to improving chronic low back pain treatment in terms of clinical effect, but also in terms of economic effect. Chronic low back pain is responsible for significant

direct and indirect costs.[3] Non-specific low back pain affects people of all ages and is a leading contributor to disease burden worldwide.[4] It is hypothesized that a significant proportion of these patients have complaints of the often-overlooked SIJ. Elevating the consideration of the SIJ as a prevalent contributor to chronic low back pain holds the promise of diminishing diagnostic delays and subsequently reducing treatment delays. This shift in focus, encompassing both conservative and surgical approaches, particularly in the form of MISJF, is anticipated to result in decreased healthcare costs. Definitive conclusions on this matter are expected upon the completion of the SACRIFICE study (**chapter seven**).

The findings in this thesis carry significance for a broad audience, including policymakers, healthcare professionals, and, notably, individuals with SIJ dysfunction. For policymakers, the results provide valuable insights into the treatment effects of MISJF in addressing SIJ dysfunction. These insights can be instrumental in informing healthcare professional clinical practices, offering them new perspectives on the clinical outcomes of MISJF and a deeper understanding of SIJ dysfunction in general. This may prompt healthcare providers to consider referring such cases to specialized centers performing MISJF in the Netherlands. This approach aligns with the concentration of healthcare expertise, ensuring patients receive specialized care tailored to their specific needs. Finally, individuals with SIJ dysfunction may gain from our results because of the potential beneficial effects of MISJF. As mentioned before, most affected patients according to our research are middle-aged women who suffer from EDS or developed complaints after pregnancy. Notably, for these individuals, opting for MISJF may not only contribute to the amelioration of their symptoms and functional impairment but could also carry positive economic implications. Considering that many of these women are in their work years, the potential improvement in their health through MISJF may translate into enhanced work productivity and reduced economic burden associated with chronic health issues.

Knowledge dissemination of the results of this thesis was realized through presentations at national and international conferences and in scientific journals. Moreover, this thesis subject has provided opportunities for four students of the bachelor's program Physiotherapy and Biometrics, and master's program Medicine to conduct their thesis research projects. In anticipation of the SACRIFICE study, the collaborative efforts among the three MISJF-performing

centers in the Netherlands have been pivotal in shaping the design of this multicenter RCT. Notably, our collaborative history with Medical Spectrum Twente, one of the participating centers, underscores a productive partnership. Furthermore, the engagement of the national EDS society in crafting the SACRIFICE study protocol and its ongoing involvement throughout the study reflects a commitment to a comprehensive, multidisciplinary approach. This thesis serves as a foundational step toward crafting new national treatment guidelines for SIJ dysfunction. The collaborative, multi-centric efforts have enriched our understanding of the pathology and resulted in the establishment of a multicenter RCT. This positions the study to offer insights that may impact future updates to existing guidelines from 'Federatie Medisch Specialisten'. This marks a significant stride towards optimizing SIJ dysfunction management and embracing a more inclusive and informed approach.

References

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