

## Malgorzata Starzec-Proserpio

### **Pregnancy-related Pelvic Girdle Pain – postpartum prevalence and association with pelvic floor muscle dysfunction and diastasis recti.**

#### **Summary**

**Background:** Pelvic girdle pain (PGP) is one of the types of pregnancy-related lumbopelvic pain. It is felt between the iliac crests and the lower edge of the gluteal folds, most often in the area of sacroiliac joints. PGP persists postpartum more often than low back pain and tends to turn into chronic pain condition. Among women reporting PGP in pregnancy, one in ten suffers from it for up to 11 years postpartum. That has a significant impact on the quality of life after delivery. The aim of this study was to examine issues related to postpartum PGP in a selected group of Polish postpartum women.

**Material and methods:** The study consisted of three parts. It began with a cross-sectional study during the early puerperium (part I "*hospital stage*"). At this stage, the prevalence of PGP was assessed, as well as its intensity and functional limitations associated with it, measured by the Numerical Rating Scale (NRS) and The Pelvic Girdle Questionnaire in Polish (PGQ). The pelvic floor muscles (palpation using the OXFORD and Reissing scale) and rectus abdominis muscle (palpation of inter-recti distance and linea alba stability) were also assessed. Then, in part II "*follow-up*", all patients were contacted 6 weeks after delivery to assess the prevalence of PGP and its intensity on the NRS scale and functional limitations associated with it measured by the PGQ. Women who reported PGP early postpartum were contacted again 12 and 24 weeks after delivery. Part III was a cases report of women with persistent PGP, between 6 and 24 weeks after delivery. The NRS scale and PGQ questionnaire were again used to assess the discomfort. In the pelvic floor assessment the OXFORD and Reissing scales were used. Additionally, manometric testing was performed to measure muscle tone (intravaginal resting pressure), muscle strength (maximum intravaginal squeeze pressure) and endurance (area under the curve). Patients filled out the International Consultation on Incontinence Questionnaire Short Form (ICIQ-UI SF). For the assessment of rectus abdominis, palpation of inter-recti distance and linea alba stability were performed. The following questionnaires were also used: Depression Anxiety Stress Scale 21 (DASS21), Pain Catastrophizing Scale (PCS) and Tampa Scale of Kinesiophobia (TSK).

**Results:** 411 women aged  $31.17 \pm 4.01$  were included in the study in part I. In part III 29 women with persistent PGP at  $31.62 \pm 4.17$  who were  $11.45 \pm 4.68$  weeks after delivery, were enrolled. At the level of early postpartum stage, PGP was diagnosed in 9% ( $n = 37$ ) of the subjects. After 6 weeks from delivery, PGP was reported by 15.7% of women ( $n = 42$  of 268). Among the women examined early postpartum, 45.9% ( $n = 17$ ) determined their pain at the level of 6 or more on the NRS scale. In the PGQ questionnaire, 84% ( $n = 27$ ) of the respondents had a result of 30% or more. The study groups differed statistically significantly in terms of two factors: linea alba stability ( $p = 0.054$ ) and experience of PGP in pregnancy ( $p = <0.001$ ). Linea alba stability showed a statistically significant relationship with the results of the PGQ questionnaire ( $p = 0.007$ ). Functional parameters of the pelvic floor muscles, inter-recti distance and presence of diastasis recti were not statistically significant in the context of PGP prevalence and intensity. The logistic regression showed a greater chance of postpartum PGP in patients reporting urinary incontinence (during pregnancy or before) ( $OR = 2.056$ ) and older women ( $OR = 1.101$ ).

In women with persistent pain, between 6 and 24 weeks after delivery (part III: "*cases report*"), functional limitations resulting from PGP were associated with the number of positive functional tests ( $\rho = 0.456$ ,  $p = 0.013$ ), superficial pelvic floor muscle tone ( $\rho = -0.426$ ,  $p = 0.021$ ) and higher values of the TSK questionnaire ( $\rho = 0.377$ ,  $p = 0.044$ ). More than half of the women (55.2%  $n = 16$ ) had clinically significant intensity of kinesiophobia, and more than 1/3 (37.9%  $n = 11$ ) showed the level of catastrophizing indicating an increased risk of ongoing disability for another year.

**Conclusions:** PGP is also a significant problem among Polish postpartum women. The occurrence of PGP in the early postpartum period does not appear to be related to the inter-recti distance or pelvic floor muscle function. The stability of linea alba is a factor differentiating the groups of women with and without PGP and positively correlates with the intensity of functional limitations. The ability to properly activate pelvic floor muscles, and the level of kinesiophobia and catastrophizing in women with PGP should attract attention of health care providers.