Pregnancy-related Low Back and Pelvic Girdle Pain: how can we help?

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Aims of today’s talk

- Overview of anatomy & function of the pelvic girdle
- Definition of “pregnancy-related pelvic girdle pain”
- Aetiology/ Risk factors/ Treatment
- What can we do to help?
Factors influencing pregnancy & birth outcomes

**Biomedical:** physiology/pathophysiology, medical conditions: diabetes, hypertension, obstetric & gynaecological conditions, multiple pregnancy, fetal welfare, position/lie

**Biopsychosocial:** psycho-social, culture/community, socio-economic factors, model of care/carer, birth environment, accoucheur, presence of support, woman’s beliefs and values, autonomy, pain coping strategies, fear

**Biomechanical:** anatomical and musculoskeletal conditions: lumbar &/or pelvic girdle pain, connective tissue, neuro-muscle control, exercise, range of movement, postural & work habits, previous injury, trauma

Pierce, 2008
The Pelvic Girdle

• Attaches the vertebral column to the lower limbs with the strongest ligaments of the body
• Transmits weight/forces between the upper body and the lower limbs
• **Pivotal point:** strength and stability is essential for optimal function
• Supports and protects the bladder, uterus, bowel/rectum
Ilium: Medial View

Marieb & Hoehn

Figure 7.27c
Ligaments of the pelvis

Mayes’ Midwifery
p.276, fig. 16.3
Ligaments of the pelvis

sacro-spinous lig.

sacro-tuberous lig.
Deep muscles of hip

Marieb & Hoehn

Figure 10.20b–c
Muscles of anterior thigh

Marieb & Hoehn
Muscles of the Abdominal Wall

Pectoralis major
Linea alba
Tendinous intersection
Rectus abdominis
Serratus anterior
Transversus abdominis
Internal oblique
External oblique
Aponeurosis of the external oblique
Inguinal ligament (formed by free inferior border of the external oblique aponeurosis)

Marieb & Hoehn
Muscles of the Abdominal Wall

Figure 10.11b

Marieb & Hoehn
Superior view of pelvic floor

Marieb & Hoehn

Figure 10.12a
The sacral plexus

Marieb& Hoehn, fig 13:11, p. 516
Pelvic Stabilising system:

• Spinal stabilising system (Panjabi 1992):
  • Passive musculoskeletal system
  • Active musculoskeletal system
  • Neural & feedback system
• Form closure: osteoarticular/ligamentous
• Force closure: myofacial (Lee & Vleeming, 2000)
• ‘Core stability’: the pelvic floor and the deep abdominal muscles
Lumbo-pelvic stability: Posterior oblique system

Lee, 1996
The pelvic girdle in pregnancy, childbirth & postpartum

• Landmarks enable assessment of growth, position & descent of fetus during pregnancy & birth
• Bony canal through which the fetus much pass for vaginal birth
• Pelvic girdle pain: pregnancy-related
• Intrapartum trauma: instrumental delivery, coccydynia, symphysis pubis dysfunction, diastasis symphysis pubis
Movement of pelvic joints during childbirth

- 20mm inferior & 7mm anterior movement of the ilium on the sacrum;
- Forceps may cause a grade 5 posterior movement of the sacrum,
- Possible rupture of pubic ligaments
- Bleeding into sacroiliac joint → sacroiliitis

Palastanga, Field & Soames fig. 4.56, p. 397
Fascia, pregnancy and birth

- Linea alba: complex CT that connects left & right abdominal muscles
- Average inter-recti distance = 0.9 - 1cm, diastasis occurs when distance is > 1-2cm
- Trauma to the linea alba &/or endopelvic fascia →
- “Non optimal strategies for posture & movement &/or breathing create failed load transfer that can lead to pain, incontinence & breathing disorders” (Lee et al, 2008)
Pregnancy-related Low Back &/or Pelvic Girdle Pain

- Historical perspective: literature difficult to evaluate & draw conclusions due to variation in terminologies & classification methods:
  - Pelvic instability
  - Posterior pelvic pain
  - Pelvic joint/girdle syndrome
  - Symptomatic pelvic girdle relaxation
  - Symphysis
  - Symphysis pubis dysfunction/diastasis
- Often not differentiated from LBP
- Reported prevalence rates of the condition vary
Pregnancy-related Low back and Pelvic Girdle Pain

• Pain of musculoskeletal origin that is experienced in the lumbar and/or sacro-iliac area during pregnancy or in the immediate postpartum period. Pain may occur in conjunction with or separately in the symphysis pubis

(Vleeming, Albert, Ostgaard, Sturesson, & Stuge, 2008)
Symphysis pubis dysfunction

- Increased mobility of the pubic joint
- Normal gap in pregnancy up to 9mm, can be > 10mm, no relationship between degree of separation & clinical symptoms
- Symptoms range from mild-intermittent groin/pubic pain to severe disabling pain
- Often audible click or crunch of the joint
- Onset can be insidious or traumatic
- Surgical fixation if diastasis > 4cm
- ‘Diastasis of symphysis pubis’: different condition?
Low back and pelvic girdle pain

- ~ 50% women experience back and/or pelvic girdle pain (PGP) during pregnancy (? Severity)
- Important to differentiate LBP and PGP
- Incidence (point prevalence) of PGP is ~ 20-42%
- ? Functional impairment ↑ with combined LBP/PGP

(Bastiaanssen, de Bie, Bastiaenen, Essed, & van den Brandt, 2005; Vleeming et al., 2008; Wu et al., 2004)
Morbidity of pregnancy-related LBP &/or PGP

- Reduced ability to maintain an active lifestyle during pregnancy (Olsson & Nilsson-Wikmar, 2004)
- Severe cases require mobility aids eg walking stick/crutches/wheelchair
- Venous thrombosis is possible complications of bed rest or reduced mobility (Babarinsa, Adewole, Fatade, & Ajayi, 1999)
- Risk of chronic pain condition (Robinson, Eskild, Heiberg, & Eberhard-Gran, 2006)
Morbidity of pregnancy-related LBP &/or PGP

- Risk to psychological health, depression (Brown & Lumley, 2000; Gutke, Josefsson, & Oberg, 2007; Mogren, 2006).
- Increased sick leave (Olsson & Nilsson-Wikmar, 2004)
- ? Associated with urinary incontinence (Lee, Lee, & McLaughlin, 2008; Pool-Goudzwaard et al., 2005; Smith et al., 2008).
- ? Increased use of analgesics during pregnancy
- ? Influence on mobility in labour and mode of birth
Aetiology

- Hormonal factors? Can have increase mobility of pelvic joints but not correlated pain
- Relaxin/alteration in relaxin receptors: evidence inconclusive
- Oral contraceptives may influence collagen metabolism
- Asymmetrical movement or positioning of pelvic joints/ altered pelvic girdle biomechanics secondary to altered neuro-muscular control
- Diet/ diabetes/ other?
Risks for developing back/pelvic pain during pregnancy

- Previous history of back pain
- Previous trauma to the pelvis

Conflicting evidence:
- physically demanding work
- multiparity
- hyper-mobile joints (connective tissue insufficiency)
- Obesity/ BMI

(European Guidelines on diagnosis and treatment of pelvic girdle pain, 2008)
Management

• There is evidence of a reduced understanding of the significance of pregnancy-related LBP and PGP amongst caregivers (Fredriksen, Moland, & Sundby, 2008; Owens, Pearson, & Mason, 2002; Wellock & Crichton, 2007)

• The condition is often described as a “minor disorder” or “common discomfort” that must be endured until after the baby is born
What can we do to help?

• **Acknowledge**
• **Antenatal/postnatal referral**
• **Advice** for back/pelvic girdle pain:
  – Avoid activities that cause uneven weight on legs or twisting the body eg: standing on one leg, sitting cross legged, vacuuming/sweeping, stairs
  – Avoid bending, lifting & carrying heavy things
  – Reduce stride length
  – Use stability strategies for postural change
• **Anticipate**: Mobility and positioning in labour
Treatment of LBP &/or PGP
Cochrane Review (Pennick and Young, 2007)

- Individualised programme focusing on specific stabilising/strengthening exercises and pelvic tilts
- Pelvic belt for symptomatic relief
- ‘Water gymnastics’: 2x RCTs
- Special pillows: low level evidence
- Information (education): no evidence
- Acupuncture/ stretches/ physiotherapy appear to relieve pain more than ‘usual’ care alone (ie analgesics, physical modalities, belt)
- All studies have moderate to high bias
Stability Exercise using the abdominal muscles

- Keep a curve in your back
- Gently tighten the abdominal muscles pulling them towards your spine
- Don't hold your breath

A pelvic belt may assist with pubic or hip joint pain
References


• Pennick, V. E., & Young, G. (2008). Interventions for preventing and treating pelvic and back pain in pregnancy. Cochrane Database of Systematic Reviews (2 ).

