Where are we in the field of pregnancy related pelvic girdle pain?

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Pelvic girdle pain (PGP)

• “Is a specific form of LBP that can occur separately or in conjunction with LBP”

*European guidelines for the diagnosis and treatment of pelvic girdle pain*

Eur Spine J, 2008
Vleeming A, Albert H, Östgaard HC, Sturesson B, Stuge B
PGP defined by

• pain experienced between the posterior iliac crest and the gluteal fold, particularly in the vicinity of the SIJ

• pain may radiate in the posterior thigh and can also occur in conjunction with/or separately in the symphysis

• the endurance capacity for standing, walking, and sitting is diminished

• generally arises in relation to pregnancy, trauma or reactive arthritis

• diagnosis can be reached after exclusion of lumbar causes

• the pain or functional disturbances in relation to PGP must be reproducible by specific clinical tests
• What is the most optimal diagnostic process for patients with PGP?
Clinical tests for PGP

• Provocation tests
  – P4/thigh thrust
  – Patrick Faber
  – Gaenslen’s test
  – Modified Trendelenburg

• Pain palpation tests
  – LDL
  – Symphysis

• Functional test
  – ASLR test

European guidelines 2008
Diagnostics

• Strongly recommended
  – Pain history

• No evidence for
  – RTG
  – CT
  – Scientigraphy
  – External frame fixator

• Insufficient evidence
  – Pain referral maps
  – Local SIJ injections

European guidelines 2008
• What is the most effective treatment for reducing pain and improving disability in patients with PGP?
Recommended treatment

• Adequate information and reassurance of the patients

• Individualized exercises for pregnant women

• Individualized multifactorial treatment for other patients

• Medication (excluding pregnant), if necessary, for pain relief
No evidence to recommend:

- Back school classes
- Specific pillows
- Manipulation or joint-mobilisation
- Electrotherapy
- Rest
- Information as a single treatment
- Massage as a single treatment
- Pelvic belt as a single treatment

- Indications that acupuncture during pregnancy may reduce pain
  - high quality studies are needed
Discussion

- PGP – does it exist?
  - a subgroup of LBP?
- Few studies
  - No guidelines on PGP identified
    - Netherland
    - Sweden
  - One systematic review LBP/PGP (Stuge 2003)
    - several review articles
  - Few RCT’s
Evidence

- Methodological quality
- The quality of the intervention

Evidence that only assess methodological quality may be of limited value for clinical practice!
• Be critical to evidence / guidelines

• Be critical to own practice

Treatment should be based on findings from *individual* examination
Prevalence

- 20% of pregnant women
- 7% severe pain postpartum
Pathogenesis

• Hormonal

• Motor control

• Biomechanical

• Bio-psycho-social
Hormonal

- There was no difference in serum relaxin concentration between the control and study group, nor between the subgroups of women with pelvic pain (Albert 1997).
- No evidence of relaxin having an impact on symptoms and disability (Vøllestad 2012).
- Low evidence for the association between PGP and relaxin (Aldabe 2012).
Biomechanical

- Larger motion of the symphysis in PGP
  - large overlap, not relevant as a diagnostic tool in the individual case Mens 2009
  - asymmetrical motion Damen 2001
- Sacrospinaous ligament as a source of PGP Torstensson 2009
- Superficial SIJ structures is a potential pain source in PGP Palsson 2012
- Moderate level of evidence for PGP being related to altered pelvic mechanism and/or motor control Bussey 2012
Motor control

- Abnormal patterns  \( \text{Hungerford 2003, Beales 2009, 2010} \)
- Positive changes  \( \text{O’Sullivan & Beales 2007, Stuge 2004} \)

- ↑ force closure
- ↓ force closure  \( \text{O’Sullivan & Beales 2007} \)
The association between PFM function and PGP
– a matched case control 3D ultrasound study

Stuge B, Sætre K, Hoff Brækken I, 2012

• Women: > 6 months postpartum

• PGP
  • sacroiliac region and/or the symphysis
  • distal and/or lateral for L5-S1 area

• Positive clinical tests:
  – Posterior Pelvic Pain Provocation (P4)
  – Active Straight Leg Raising (ASLR) - minimum 3/10
  – LDL
  – Pain provocation of the symphysis

• Exclusion:
  – radiating LBP or previous pelvic floor surgery
Results

• A hypothesis of an impaired ability to voluntary contract the PFM in patients with PGP was not supported

• Women with PGP had significantly smaller levator hiatus areas and a tendency for higher vaginal resting pressure compared to the controls

• A significantly smaller levator hiatus and a tendency of higher resting pressure
  – may indicate an increased activity of the PFM
Conclusion

• No evidence to recommend PFM strength exercises for patients with PGP

• Limitation
  – only voluntary contraction was measured
    • not an automatic response
Bio-psycho-social

• Postpartum depressive symptoms were 3 times more prevalent in women having lumbopelvic pain than in those without Gutke 2007

• Normal mental health (SF-36) and emotional distress (HSCL) Stuge 2004

• Emotional distress during pregnancy is associated with PGP postpartum Bjelland 2012

• Higher level of catastrophizing and fear avoidance beliefs Olsson 2010
How to treat women with pregnancy-related pelvic girdle pain?
Evidence for treatment

• Those who participated in an exercise program in addition to prenatal care, regardless of treatment program, reported less intense pain than those who received usual care alone
  – potential risk for bias
  – placebo effect

Interventions for preventing and treating pelvic and back pain in pregnancy
Pennick & Young, Cochrane Library 2007

• Individualized exercises in pregnancy
  European guidelines for the diagnosis and treatment of pelvic girdle pain
  Vleeming et al, Eur Spine J, 2008
A treatment program focusing on exercises for motor control and stability

- The efficacy of a treatment program focusing on specific stabilising exercises for PGP after pregnancy. A randomized controlled trial.

- A two-year follow-up of...
How to treat postpartum PGP?

Do exercises help?
Theoretical principles for motor control & stability

• “The self-locking mechanism”

  Vleeming et al 1997

• The deep local muscles

  Richardsson et al 1999
Design

Included n= 81

Baseline

Tests

CG n= 41 → n=41 → n=39 → n=31

SSEG n= 40 → n=40 → n=39 → n=34

20 weeks (at completion of intervention)

1 year postpart.

2 year postpart.

Tests
Inclusion criteria

• Pelvic pain after pregnancy
  – in the buttocks and/or in the symphysis
  – distally and/or laterally to the L5-S1 area

• Clinical tests for inclusion:
  – Posterior Pelvic Pain Provocation (P4) Östgaard 1994
  – Active Straight Leg Raising (ASLR) Mens 2001
  – Pain provocation of long dorsal S-I ligament Vleeming 2002
  – Pain provocation of the symphysis Albert 2000
Interventions

Information / coping strategies
Body awareness / ergonomics

Ordinary physical activity

Mobilization / self mobilization
Massage / relaxation
Stretching

Strengthening exercises

Specific stabilizing exercises

CG

SSEG
Transverse abdominal muscles

group SSEG
TerapiMaster

exercise equipment

- Reduced weight bearing
- Exercise without pain
- Optimal individual dosage
- Closed kinetic chain (increase co-contraction)
- Proprioceptive stimulation
- Home exercise
- Systematic progression – exercise diary, feedback
Body awareness & ergonomic advice
A treatment program

- Form closure
- Force closure
- Motor control
- Emotions/awareness

Vleeming & Lee 2001
A treatment program focusing on exercises for motor control & stability  
Stuge et al Spine 2004

Oswestry score (0-100)

<table>
<thead>
<tr>
<th></th>
<th>CG</th>
<th>SEG</th>
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</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>20</td>
<td>20</td>
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<tr>
<td>20 weeks</td>
<td>60</td>
<td>60</td>
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<td>1 year postpar</td>
<td>80</td>
<td>80</td>
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<tr>
<td>2 year postpar</td>
<td>90</td>
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</table>

Pain intensity (VAS 0-100)

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<td>2 year postpar</td>
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p=0.15   p<0.001   p<0.001   p<0.001

p=0.19   p<0.001   p<0.001   p<0.001
• Lumping heterogeneous patients into a single classification of lumbopelvic pain/PGP
  • sufficient power for an intervention study 😊
  • optimal treatment for the individual patient?

• "One-size-fits-all" approach
  • PGP more disabled than LBP Gutke 2006, Robinson 2010
  • Pain in all 3 joints most disabled, poor prognosis
    Albert 2001, Robinson 2010, Stuge 2011

• Will the "stay active" approach target underlying mechanisms of lumbopelvic pain?

• Targeted interventions
  – closer matching of treatments to patient characteristics
Exercises

motor control

strength

relaxation

cognitive

!!! PERFORMANCE !!!
Qualitative research report

Evidence and individualization: Important elements in treatment for women with postpartum pelvic girdle pain

Stuge B & Bergland A.
Physiotherapy Theory and Practice, 2011
Patient perspective

- The dialog and the individualized guidance seems to be experienced as positive for the women’s coping of their daily life.

- By being active agents in managing their PGP and therapy they learned to set themselves proximal goals.

- Perceived hope and self-efficacy seems to be essential for developing a capacity for self-management and an enhanced ability to benefit from appropriate learning experiences.
No exercise is better than the way it is performed!
The Pelvic Girdle Questionnaire:

A condition-specific instrument for assessing activity limitations and symptoms in people with PGP

Stuge B, Garrat A, Jenssen HK, Grotle M
Physical Therapy 2011
# Pelvic Girdle Questionnaire

To what extent do you find it problematic to carry out the activities listed below because of pelvic girdle pain? For each activity tick the box that best describes how you are today.

<table>
<thead>
<tr>
<th>How problematic is it for you because of your pelvic girdle pain to:</th>
<th>Not at all 0</th>
<th>To a small extent 1</th>
<th>To some extent 2</th>
<th>To a large extent 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dress yourself</td>
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<tr>
<td>2. Stand for less than 10 minutes</td>
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<tr>
<td>3. Stand for more than 60 minutes</td>
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<tr>
<td>4. Bend down</td>
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<td>5. Sit for less than 10 minutes</td>
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<td>6. Sit for more than 60 minutes</td>
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<tr>
<td>7. Walk for less than 10 minutes</td>
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<tr>
<td>8. Walk for more than 60 minutes</td>
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<td>9. Climb stairs</td>
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<tr>
<td>10. Do housework</td>
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<tr>
<td>11. Carry light objects</td>
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<tr>
<td>12. Carry heavy objects</td>
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<tr>
<td>13. Get up/sit down</td>
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<tr>
<td>14. Push a shopping cart</td>
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<td>15. Run</td>
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<tr>
<td>16. Carry out sporting activities*</td>
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<tr>
<td>17. Lie down</td>
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<td>18. Roll over in bed</td>
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<tr>
<td>19. Have a normal sex life*</td>
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<tr>
<td>20. Push something with one foot</td>
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</tbody>
</table>

* This activity may be common in some cultures.
## Pelvic Girdle Questionnaire

<table>
<thead>
<tr>
<th>How much pain do you experience;</th>
<th>None 0</th>
<th>Some 1</th>
<th>Moderate 2</th>
<th>Considerable 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>21. in the morning</td>
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<tr>
<td>22. in the evening</td>
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</table>

<table>
<thead>
<tr>
<th>To what extent because of pelvic girdle pain;</th>
<th>Not at all 0</th>
<th>To a small extent 1</th>
<th>To some extent 2</th>
<th>To a large extent 3</th>
</tr>
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<tbody>
<tr>
<td>23. has your leg/have your legs given way?</td>
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<tr>
<td>24. do you do things more slowly?</td>
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<td>25. is your sleep interrupted?</td>
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* if not applicable, mark box to the right

Scoring procedure: The scores are summarized and recalculated to a percentage score from 0 (no problem at all) to 100 (maximum problem).
Reliability and construct validity in self-reported questionnaires for women with PGP

Grotle et al 2012

• Purpose
  – to examine the internal consistency, test-retest reliability and construct validity in used instruments used for patients with PGP
    • Compared DRI, ODI, PGQ activity, PGQ symptom, FABQ, SF-8, PCS

• Conclusion
  – PGQ was the only instrument with satisfactory discriminant validity
  – Recommend PGQ to evaluate symptoms and disability in patients with PGP both for clinical and research purposes

  – The responsiveness to change of instruments should be concurrently evaluated