**Introduction:**

- Low back pain is one of the most common complaints reported during pregnancy
  - When the patient identifies their chief complaint and gives us subjective information, we must remember that these are ‘symptoms’. In order to truly develop a diagnosis we must combine subjective ‘symptoms’ with objective ‘signs’.
- It is important for us as therapists to listen to the patient and, preliminarily, differentiate between true pregnancy-related low back pain (PRLBP) or actually pelvic girdle pain (PGP)
  - PRLBP = pain along the lumbar spine and above the sacrum
  - PGP = below PSIS and into the gluteal region, posterior thigh, and/or groin
  - HOWEVER, a final determination cannot be made on subjective complaints alone. We must be using objective measures to rule in or out a diagnosis
- Once a determination has been made that the patient has true PRLBP, the underlying source of pain must be identified
  - Literature review failed to provide information regarding lumbar instability in the antepartum population

**Aim/Primary Aim:**

- The purpose of this case report was to describe the PT differential diagnosis and management of pregnancy related low back pain due to lumbar instability

**Study Design/Study Format:**

- Retrospective, Single Subject, Case-Report

**Methods/Case Description:**

- Patient was a 32 year old, G2P1, woman 32 weeks pregnant with a chief complaint of an intermittent “dull, ache” in the low back (R>L), onset during the second trimester. Pain occasionally in the R buttock and RLE. –with the information we have at this point, we are still unable to differentiate between PRLBP and PGP
  - Patient notes the need to “shift back into place” when the pain “catches”
  - Aggravating factors: prolonged standing and sitting, bending forward to pick up objects from floor or care for older child
  - Relieving factors: positional changes
- Based on subjective history the preliminary hypothesis was PRLBP, specifically lumbar instability
  - Due to: hx of previous trauma, hx of participation in gymnastics, weakness of the abdominal wall due to surgical and obstetric history, symptom onset with fixed positions and relief with positional change, “catches”
  - When it comes to this list, there are a few issues. How can the author utilize “abdominal wall weakness” as evidence to support her hypothesis? It is not appropriate to assume that a patient has abdominal wall weakness due to their surgical and obstetric history. We are better than this! Objectively assess and then make decisions
- Systems Review
  - Vitals were WNL, cleared on gestational hypertension, and cleared of any other red flags and medical causes for pain due to recent blood work
This brings up a good topic for debate. How often is appropriate for BP assessment. There are many differing opinions: every visit vs eval only vs as indicated. Will cite Facebook poll to spark discussion

- History of fall as a gymnast at 15 years old, had several weeks of LBP following
- Appendectomy 18 years earlier
- Uncomplicated previous child birth but did report LBP in first pregnancy as well that disappeared after giving birth

• Tests and Measures
  - NPRS; Current = 6/10, Worst = 8/10
  - ODI = 22/50, 44% perceived level of impairment
  - Direct attention to Figure 1; a great visual representation of the signs AND symptoms of both PGP and PRLBP
  - Performed a cluster of special tests commonly used to detect instability in the general population; supported by clinical practice guidelines for instability and LBP set by APTA orthopedic section
    - Performed: Abberant movements during AROM trunk flexion, ASLR, Supine bridge test; positive test result for all 3
    - Not Performed due to gestational age/need to lay prone: Passive lumbar extension test and Prone instability test
    - Table 2 provides good information surrounding these tests; describes the process of the test, what constitutes a positive sign, and then how the patient tested
  - Pelvic girdle pain special test cluster
    - Gaenslen’s, P4, Thigh thrust, posterior compression, and FABER Test; all were negative, therefore ruled of PGP
  - Palpation: step deformity L4/5, hypertrophy of lumbar paraspinals in standing
  - Trunk AROM: WNL, except for limitations with flexion and extension and reproduction of symptoms
  - External PFM assessment: poor ability to perform endurance contraction without compensatory breath holding, difficulty with quick flicks
  - Abdominal wall assessment:
    - DRA: findings considered to be positive at all 3 points tested. The findings were BARELY significant, and then further described as not considered to be significant by the author due to gestational age
    - Difficulty recruiting TA without breath holding
    - Is this truly a full assessment? No. No standardized abdominal strength testing was performed, and even if it was, MMTs don’t give us much useful information (not functional)
    - This is a great time to bring up the utilization of diagnostic ultrasound in the pelvic PT field. Utilizing palpation for TA activation and then training is essentially like “flying blind”
      - How are we able to justify spending on biofeedback units but not on ultrasound devices that can give us a better picture of what is going on

• Evaluation/Diagnosis
  - Author felt that the findings were supportive of the initial hypothesis of lumbar instability
  - Plan of care was established to be 30 minute session, 3x/week for a duration of 4 weeks. Good prognosis due to lack of complicating factors, patient motivation, and literature supporting exercise for treatment of PRLBP

• Interventions
  - Focus was put on spinal stabilization exercises due to numerous sources validating use of these exercises in patients with PRLBP; use is also supported in the non-pregnant population
  - POC consisted of patient education, static and dynamic progressive spinal stabilization exercises and gentle, graded joint mobilizations
• Patient education = increasing postural awareness, neuromuscular activation for postural control during ADLs, labor and delivery positional planning
• Spinal stabilization = TA, PFM, multifidus, and diaphragm activation
  • most of the exercises listed under TA are really global core exercises
• Joint mobilization = PAs to hypomobile lumbar segments

Results:
• Goals at start of treatment
  o To be able to sit and stand for more than 30 minutes at a time without/with less pain
    ▪ MET → able to sit for 45 minutes without pain
    ▪ MET → able to stand for 30 minutes without pain
• NPRS improve to, current = 0/10, worst = 1/10
  o MCID met for both (2 points)
  o PROM article identifies 1.3 point MIC for patients with PRLBP (Ogollah 2019)
• ODI improved to 5/50
  o MCID met (10 points)
  o PROM articles identifies 3.1 point MIC for patients with PRLBP (Ogollah 2019)

Discussion:
• Strengths: thorough examination, utilization of literature to support rationale for intervention choices (however, in the general population)
• Weakness: single subject case report, lack of research within this specific population for how to treat the identified impairments/diagnosis

Conclusion/Summary:
• Though just one patient, the positive outcome of this case supports the idea of investigation of lumbar instability as a possible differential diagnosis in patients presenting with PRLBP
• Additionally, this case displays that early PT with a focus on neuromuscular re-education of core stabilizers, patient education, and manual techniques as needed can provide symptom management in this patient population and can possibly prevent future complications
• Of course, further research with a larger sample size and randomized controlled studies would truly promote the efficacy of this approach in the antepartum population

Clinical Application/Discussion questions
• What subjective questioning and objective measures are you currently using in practice to be differentiating between PRLBP and PGP?
  o Are there any other tests, measures, or questions for this case that should be considered?
• In what ways are you tracking patient outcomes? Self-report outcome measures? Performance-based? Why these measures? Is there literature to support their utilization in the antepartum population?
  o Any other self-report outcome measures that could have been utilized in this case?
• This article reported assessment of blood pressure at every visit (aka 3x/week for 4 weeks), what are the groups thoughts on frequency of vitals assessment? Why?
  o Cite results from facebook poll

Other References: