

**Osteopathic management of patients during pregnancy –
a snapshot summary report (Nov 2012)**

- **Key messages**
- **Symptoms**
- One of the most frequently cited symptoms of pregnancy seen by osteopaths is low-back pain.
- Other symptoms include heartburn (for which there is acknowledgement of osteopathic treatment but currently little evidence), carpal tunnel syndrome, sacroiliac pain, mid-thoracic pain and gastrointestinal symptoms.
- Differential diagnosis for carpal tunnel syndrome should include diabetes and thyroid disease.
- **Osteopathic Studies**
- One study has found evidence that pregnant patients who received osteopathic care experienced improved outcomes in labour and delivery compared to those who didn't.
- Another study has shown that osteopathic manipulative technique may help to improve or stop the deterioration of back-specific functioning in the third trimester of pregnancy.
- Non-supine positions during labour and delivery have been found to have clinical advantages including increased perineal integrity, reduced vulvar oedema and reduced blood loss.
- **Relaxin**
- It is still not established if higher levels of relaxin relate to a higher incidence of pelvic girdle pain in pregnancy; more studies have shown that there is no positive relationship.
- There is still a large gap of evidence in this subject area.

Context

This article is designed to be a brief overview of predominantly osteopathic research, with references provided for further reading; it is not intended to be an exhaustive account of the literature.

Osteopathy and pregnancy

The most significant data connected with osteopathic management of patients during pregnancy can be found from work carried out by Dr Steven Sandler, Director of the Expectant Mothers Clinic at the British School of Osteopathy¹. A survey of the first 400 cases seen at the clinic revealed a profile of the symptoms and outcomes of treatment experienced by patients up to 1996. One of the most frequently cited symptoms during pregnancy is low back pain; this has been described as occurring in 82%² to 50%^{3,4} of patients. Low back pain and referred pain to the sciatic distribution during pregnancy remain the most common symptoms reported to osteopaths. The safe and positive effects of treating low back pain at this time have been documented in the literature^{5,6,7}.

Symptoms during pregnancy

Anecdotal evidence from practice will inform osteopaths that the symptoms experienced by patients during pregnancy can vary further to include indigestion and gastrointestinal reflux⁸, hypertension⁹, sacro-iliac pain¹⁰ and carpal tunnel syndrome¹¹. Taking a careful case history with patients is imperative to allow correct differential diagnosis of symptoms; it is by no means uncommon for patients to experience complications of pregnancy which manifest as musculoskeletal symptoms. NICE¹² highlight the importance of being aware of the following symptoms of pre-eclampsia:

- Severe headache.
- Visual disturbance such as blurred vision or flashing in front of the eyes.
- Vomiting.
- Sudden swelling of the face, hands or feet.
- Severe pain just below the ribs.

The onset of gastrointestinal disorders is not uncommon during pregnancy; these can include nausea and vomiting, symptomatic gastroesophageal reflux and the onset of constipation *de novo* or the increase of chronic constipation¹³. Pharmacological options in the form of antacids are considered the first-line drug therapy; histamine₂-receptor agonists can be used with persistent symptoms⁸. Many patients are reluctant to use

medication during pregnancy: the devastating effects of thalidomide use^{14,15} in the late 1950s have still not been forgotten¹⁶. The use of osteopathic techniques to alleviate symptoms of heartburn is commonly acknowledged anecdotally but little documented evidence exists for this therapeutic approach. NICE¹² recommend the use of ginger and/or the P6 acupuncture point as non-pharmacological treatments for nausea.

Carpal tunnel syndrome (CTS) is a well documented symptom in pregnancy¹¹. Careful differential diagnosis is required since carpal tunnel can also be associated with a variety of other disorders including diabetes and thyroid disease^{17,18}. Mid thoracic pain aggravated by changes in the ligamentous tissue and increased weight of breast tissue is also frequently reported in osteopathic practice.

Effects on the musculoskeletal system

The physiological effects of pregnancy on the musculoskeletal system are well documented¹⁹; The musculoskeletal system is significantly affected by the action of relaxin, which is extensively described in the literature^{20,21}. Aldabe et al²² carried out a systematic review of evidence of the association between relaxin levels and pregnancy-related pelvic girdle pain (PPGP). Of the four high quality studies they reviewed, only one study showed that higher levels of relaxin correlated with increased PPGP. Based on the lack of uniformity in the assessment of PPGP and lack of control of risk factors, the authors recommended that further research is needed to establish the relationship between relaxin and PPGP. In a separate systematic review, Aldabe et al²³ looked at the available literature on altered kinematic, kinetic and motor control of the pelvis in pregnant women. Eight of the ten studies included showed a positive association between PPGP and altered pelvic joint mechanics and/or altered muscle motor control in pelvic movements. Six of the studies were deemed to be of high quality therefore the overall evidence for this positive relationship was considered moderate. According to Aldabe et al's ^{22,23} work, it seems that pelvic stability and pain during pregnancy may not simply be related to relaxin levels.

It is apparent that it is not only the pelvis that is effected during pregnancy. Segal et al²⁴ investigated the effects of pregnancy on the structure of the foot in a study of 60 women. 49 of the subjects completed the study where various measures were taken of their feet in their first trimester and then repeated 4-5 months post partum. The authors found a persistent loss of arch height and rigidity in addition to a greater arch drop and foot lengthening. They postulate from these results that changes in foot posture may result in an increased risk for musculoskeletal disorders in women post partum.

Osteopathic studies and low back pain in pregnancy

The use of osteopathic manipulative treatment during pregnancy and its effect on the outcome of delivery has been investigated by American osteopaths using a retrospective case control design²⁵. A number of different outcomes were reviewed in 160 patients who received osteopathic care and 161 patients who received no osteopathic care; outcomes considered included the occurrence of meconium stained amniotic fluid, pre-term delivery, use of forceps and caesarean delivery. The study found evidence of improved outcomes in both labour and delivery for patients who received prenatal osteopathic care compared with patients who did not.

Licciardone et al²⁶ carried out a randomized controlled trial of osteopathic manipulative treatment (OMT) of back pain and related symptoms during the third trimester of pregnancy. They randomly assigned subjects to 1 of 3 treatment groups:

- Usual obstetric care only (UOBC)
- Usual obstetric care and sham ultrasound treatment (UOBC + SUT)
- Usual obstetric care and OMT (UOBC + OMT)

The study protocol included soft tissue, myofascial release, muscle energy and range-of-motion mobilization. Treatment excluded high-velocity low amplitude thrusts due to a potential theoretical risk relating to increased ligamentous laxity in late pregnancy. They also excluded the use of a cranial technique: compression of the fourth ventricle; this was due to a theoretical risk that it may potentially induce labour. Licciardone et al²⁶ explains that the only evidence available on this theory is from a small uncontrolled study that involved only postdate pregnant women.

The treatment effects measured were back pain and back-specific functioning. The authors concluded from their findings that OMT lessens or stops the deterioration in back-specific functioning in the third trimester of pregnancy but the results for back pain were less conclusive. The study highlighted a number of its own strengths and weaknesses and stated a belief that a larger Phase III trial with greater statistical power and more effective control of potential confounding factors may better assess the effects of OMT in this patient group.

NICE¹² have produced guidelines on ante-natal care, which include guidance on managing common symptoms and lifestyle choices. They recommend exercise in water, massage and back care classes for the management of back pain during pregnancy.

Work has also been undertaken by osteopaths in the US to look at the effects of posture during delivery²⁷; non-supine positions during labour and delivery were found to have clinical advantages without risk to the mother or infant. Enhanced outcomes included perineal integrity, reduced vulvar oedema and reduced blood loss.

Symptoms frequently persist after delivery and pelvic pain caused by symphysis pubis separation is described in the literature²⁸; a scoring system has now been developed to attempt to produce an objective assessment value for this distressing condition²⁹ which has a variety of approaches to its management strategies³⁰.

Significant gaps remain in the literature in this area of osteopathic care. An initiative has been undertaken by the Haywards Heath research group to develop a template to collect data to build up a case series to document information concerning the osteopathic management of patients during pregnancy. It is important for osteopaths to be able to demonstrate a history of treatment in this clinical domain that is both safe and effective.

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