

Treating Pregnant Patients: A Unique Clinical Consideration

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Motor vehicle collisions are [the leading cause of injury during pregnancy](#).¹ Consider a case in which a pregnant woman comes to your office following an MVC. After a careful consultation and review of the collision history, you expect a quick resolution of your patient's injuries. Perhaps the insurance company has stated that the injuries should resolve in 6-12 weeks. But will it be so?

Although pregnancy should not be considered a "medical condition," it is, however, a "condition" that alters the female; as such, it is a complicating factor that must be considered in terms of your treatment strategy. Aside from the obvious outward physical manifestations, there are underlying physiological changes that we need to consider, as it will directly affect our results.

Pregnancy should be considered by us as a tertiary factor (a complication) when treating a patient during the course of her pregnancy. A tertiary factor is one that makes a case more difficult than usual and is usually not a direct result of an injury. Other examples of tertiary factors are abnormal posture, diabetes, obesity, osteoporosis, and birth defects.

How does pregnancy complicate treatment? Again, other than the obvious outward physical changes that you must contend with, there are physiologic changes as well. The primary changes involve hormones, and not just any hormone; a specific hormone called relaxin.

During pregnancy, several hormones are produced, one of which is relaxin. This hormone is produced in the corpus luteum in both pregnant and non-pregnant women, but during the first trimester of pregnancy, levels rise as additional relaxin is produced by the decidua. The hormone reaches peak levels during the 14 weeks of the first trimester and as delivery nears.

In animals, relaxin widens the public bone, softens the cervix (cervical ripening), and relaxes the uterine musculature, helping to facilitate labor. [However, in conflict with tissue remodeling](#), relaxin also affects collagen metabolism, inhibiting collagen synthesis and enhancing its breakdown by increasing matrix metalloproteinases.² As a group, metalloproteinases are a group of endopeptidases that are capable of degrading several extracellular matrix proteins such as collagen - the backbone of ligaments. This would directly interfere with treatment and recovery.

There are several articles that deal with the issue of pelvic girdle relaxation during pregnancy. [One such article from MacLennan and MacLennan](#)³ suggests that the SI joint and the pubic symphysis are the most common joints affected. In their study, cases involved regular pregnancy without trauma. In the same year (1997), [Albert, et al.](#),⁴ [found no difference in relaxin levels](#) in two groups of females - one with and one without pelvic pain. In both studies, the authors noted that in humans, relaxin loosens the pelvic ligaments.

Relaxin receptors are found in the heart, smooth muscle and connective tissue. Relaxin brings about a softening of connective tissues (cartilage and tendons), so the bones at the front of the pelvis can separate, making it easier for the baby to pass through the pelvic inlet. This can cause the sacroiliac joint to rotate abnormally and load abnormally, causing pain in the low back and buttocks. Relaxin, like other hormones, will not just target a single ligament, but also will affect tissues of other joints, loosening them and making them more susceptible to injury.^{3,5}

Therefore, any attempt to stabilize a patient during pregnancy, especially close to delivery, may not have the desired effect, since your attempts to fix (stabilize) the damaged ligaments would be in direct conflict with relaxin's actions. This should be considered a major issue in any case and very significant. It should not be ignored. It *will* affect your results.

The take-home message here is pretty simple. Most insurance companies are currently expressing a desire for resolution in three months (sometimes less even) and will state so in IME reports and/or EOBs. A blanket statement like this ignores many factors including occupant factors (e.g., pregnancy). You now have additional information as to one complicating factor that can cause a case to go well beyond nine months. In these types of cases, management should be focused on quick resolution, but you, the patient and the insurance company need to realize that quick resolution won't always be possible. Once the pregnancy is over and the hormone relaxin substantially reduces, then and only then will you have the best chance of resolution. Your treatment plan should reflect this, as should your prognosis. Despite any symptomatic relief you may provide the patient and the false sense of security that comes with it, you might be surprised to find the patient back in your office with the same complaints several months later with a new baby in tow.

References

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JULY 2010