

Pregnancy Stress, Foetal Toxins and Allergies - How Do They All Connect?

Abstract

Several factors determine the development of a healthy and balanced immune system in a newborn. Pre- and post-natal stress, as well as exposure to trauma or severe illness, can affect the delicate balance of the developing foetus's immune system. In this decade we have seen a rise in anaphylactic allergies, and more and more children are becoming allergic to multiple foods and environmental factors for no apparent reason. This article discusses the role of prenatal emotional stress and trauma, poor diet and postnatal factors such as immunisations in the development of severe allergies from the perspectives of both conventional medicine and traditional Chinese medicine.

Introduction

One of the most common scenarios I see at my practice is children who are born with severe allergies with no genetic predisposition. When looking at their blood work for IgE (Immunoglobulin E antibodies) their numbers are much higher than normal, and they are anaphylactic or severely allergic to many foods and/or environmental factors. I started investigating this phenomenon and found that there is one thing that many of these children have in common: their mothers experienced some sort of emotional trauma during the pregnancy, such as marital difficulties, career or financial crisis, or else it was an unwanted pregnancy or had followed a traumatic miscarriage. In essence all these women experienced fear and tremendous amounts of stress for a significant period during their pregnancies. These extreme emotional states seem to compromise the immune system of the newborn in a way that has not been fully investigated in the literature so far. In this article I explore this subject from the perspective of both conventional medicine and traditional Chinese medicine (TCM) as well as discussing a few specific cases I have seen in my practice.

(HCG). In a normal pregnancy, the level of HCG doubles approximately every two days during the first 10 weeks. HCG keeps the pregnancy hormones oestrogen and progesterone at their appropriate levels until the placenta has developed enough to take over this function (Cooper, 2011). From a TCM perspective, in the first trimester the combined jing (essence) of the parents starts the creation of the embryo. In this trimester the strength of the mother's qi is very important, and women who start the pregnancy with weak Kidney and Spleen qi typically experience extreme fatigue. The TCM classic *Qian Jin Yao Fang* (A Thousand Golden Essential Prescriptions) by Sun Simiao (Tang Dynasty, 618-907 AD) states that the mother's primary task is to remain psychologically healthy and balanced; she should avoid frights, annoyance, anger and anxiety and sleep well in a peaceful environment. Many of the women who come to my practice, whose children develop severe allergies, experienced extreme stress, fear, uncertainty or emotional instability during this part of their pregnancy. From a TCM perspective, fear weakens the Kidneys and uneven emotions affect the Liver. Hence these emotions end up affecting the flow of qi in the body. From an orthodox medicine perspective, excess stress causes excess secretion of cortisol, which weakens the adrenal glands and affects the secretion of other key hormones in the development of the foetus (Plechner, 2004).

Foetal heat toxins, immunisations and stress

Foetal heat is the TCM concept that describes a form of pathological heat that can be passed to the child from the mother in the womb. This pathological heat can manifest as various diseases when the child is

By: Mor Balaban

Keywords:

Pregnancy,
foetal toxins,
TH1, TH2,
lingering
pathogenic
factors,
allergies,
paediatric,
acupuncture,
Chinese
medicine

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The first trimester

Many hormones are involved in a healthy pregnancy. The first hormone to make its appearance after conception is human chorionic gonadotropin

born. According to TCM theory, childhood diseases that manifest with skin lesions (such as measles, chickenpox and rubella) are a mechanism by which the body purges the excess heat. Unfortunately, with the introduction of vaccines, the incidence of these childhood diseases has significantly decreased. Furthermore, with vaccines, the introduction of a weakened organism to the blood level of a child with an underdeveloped immune system creates a bigger problem: lingering pathogenic factors, which essentially means even more heat and toxins. Foetal heat begins as pathological heat in the mother prior to being passed to the child. Not every person develops the same or the same amount of foetal heat or toxins. The mother's diet, exposure to chemicals, toxins and pollution, as well as her constitution and general state of health at the time of conception and during the pregnancy, all affect the amount of toxins that will be transferred to the foetus. A study in the *Journal of Clinical and Experimental Allergy* indicated that diet during pregnancy influences the foetal immune system (Sausenthaler et al., 2007). According to TCM theory, taxation by the seven emotions, excessive stress, anxiety, depression and fear all affect the movement of qi in the body. Stagnant qi turns to heat. Furthermore, these extreme emotions stir Heart fire. In all cases I have seen in my practice of excessive foetal heat toxins there was an involvement of an extreme emotional state at conception or during the pregnancy.

Th1 and Th2 immune responses

Cytokines are the hormonal messengers responsible for most of the biological effects in the immune system. They can be functionally divided into two groups, or two types of immune reaction: cellular or pro-inflammatory immunity (Th1) and humoral or anti-inflammatory immunity (Th2). Th1 type cytokines tend to produce the pro-inflammatory responses that are responsible for killing intracellular pathogens (parasites, bacteria and viruses) and for perpetuating autoimmune responses. Th2 type cytokines are associated with the promotion of IgE and eosinophilic responses (allergies). These two types of immunity affect each other. When one is more dominant, it down-regulates the other. During pregnancy a Th2-dominant (weak Th1) immune system is desirable both in the foetus and the mother in order to prevent rejection that would lead to miscarriage (Berger 2000). This is the reason babies are naturally born with a Th-2 dominant immune system. Stress, as well as anxiety and depression, have been shown to promote the Th2 response (Elenkov et al., 1999; Karlsson et al., 2016), which means babies who are born to mothers who experience high anxiety or stress during pregnancy will have a strongly Th2-dominant immune system. Since the role of Th1 immunity is to fight pathogens invading the body, an exposure to viruses or bacteria during early childhood promotes a desired switch to Th1 dominant immunity. The introduction of vaccines

has significantly decreased the exposure to childhood diseases (CDC, 2017) and with it a decrease in the natural shift to Th1 immunity (Chad 2001). We are therefore seeing a rise in Th2-dominant babies and the current hypothesis is that these babies are those who go on to develop full-blown allergies (Berger 2000).

Case studies

The following are four cases out of many that I have seen over the years. All the anaphylactic or severely allergic children I have seen in practice were fully immunised at the suggested schedule.

Eric, 11 years old - 'allergic to life'

Eric was an 11-year-old boy who suffered from asthma all year round. He was thin and frail, yet very active and had a fiery demeanour. When he fell asleep during acupuncture treatments it was extremely difficult to wake him up. Eric's long term middle jiao vacuity was complicated by weak Kidneys. He presented with Kidney yin and yang deficiency, inability to grasp Lung qi and Heart fire. Eric was anaphylactic to the majority of foods and highly allergic to all trees, grass, pollen, ragweed, mould and dust. No one in his close or extended family suffered from these kind of allergies. Upon interviewing his mother, I found out that when she was two months pregnant with him, she and her husband went through one of the most difficult periods of their lives due to financial and marital issues. Her pregnancy was otherwise uneventful with the exception of a cerclage procedure which ensured a full-term delivery.

Maya, five years old - severe environmental allergies

Maya was a five-year-old girl who suffered from severe eczema. Her skin was raw and bleeding from her constant scratching, and her sleep was interrupted due to the itchiness. She was full of heat toxins that were forcing their way out through her skin. Maya was severely allergic to almost all environmental factors, and mildly allergic to milk, wheat and eggs. No one in her family had food or environmental allergies to this degree. Maya's mother experienced a tremendous amount of stress during pregnancy. The pregnancy was an unwanted one; she did not feel emotionally ready for it and she described the first few months of the pregnancy as 'the most stressful months in her life.' Not surprisingly her Liver was overactive throughout the whole pregnancy and she experienced severe heartburn for the entire nine months. Maya's mother also consumed alcohol and smoked occasionally during the pregnancy. She also used 'Tums' for her heartburn throughout the entire pregnancy. I suspect that all of these factors contributed to the allergies experienced by Maya.

Rick, six years old - failure to thrive

When Rick first came to my clinic he was two years old. He was being fed hypoallergenic formula through a gastric tube. Rick had been diagnosed with failure to thrive. He was vomiting the hypoallergenic formula and was severely constipated. His tongue indicated severe heat, specifically in the Liver and in the digestive system. Rick was diagnosed with multiple severe food allergies and environmental allergies. By strengthening his Spleen and clearing heat I was able to calm down his immune system. He was given *Ban Xia Xie Xin Tang* (Drain the Epigastrium Decoction) for a period of one month. It almost immediately stopped his vomiting and he started having two to three regular bowel movements per day. He went through a few years of NAET (Nambudripad's Allergy Elimination Techniques) therapy to eliminate his food allergies and today he is six years old and thriving and growing. His mother suffered a major loss prior to her pregnancy with Rick: she lost twin babies to foetal demise at six months gestation. The pregnancy with Rick was therefore full of fear as she described it; fear of not completing yet another pregnancy whilst reliving the trauma and loss of the first.

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Joshua, three years old - multiple anaphylactic allergies

Joshua was a three-year-old boy with severe anaphylactic allergies to eggs, milk, all nuts and legumes. Joshua started projectile vomiting with the introduction of milk-based formula. He was also diagnosed with failure to thrive at the age of nine months. Similarly to Rick, Joshua suffered from constipation and, prior to my treatments was given laxatives regularly. Joshua was a first-born to a young mother with a history of chronic illness (Lyme disease) and clinical depression. In addition, during the pregnancy she had food poisoning and was hospitalised. As explained above, the mother's and father's constitution are an important factor in the health of a child; clearly a chronic disease such as Lyme is likely to have an effect. In addition, clinical depression, even when controlled with medication, indicates an imbalanced constitution. When adding to these two underlying factors an acute stressful episode of food poisoning mid-pregnancy, we can see how Joshua's immune system may have been compromised.

Summary

According to a study released in 2013 by the Centers for Disease Control and Prevention, food allergies among children increased by approximately 50 per cent between 1997 and 2011 (CDC, 2013). There has been some inconclusive research about the correlation of this rise with the introduction of immunisations (McKeever et al., 2004; Anderson et al., 2001). Nevertheless, it has been hypothesised that one of the reasons for the significant increase in allergic diseases in developed countries is better hygiene and a relative lack of 'Th1-inducing' infections during infancy (Chad, 2001). Several studies concluded that there is a correlation between prenatal stress and the development of asthma (Trump et al., 2016; Flanigan et al., 2016). Few studies discuss the correlation of stress and the delayed or compromised TH1/Th2 shift in the newborn (Elenkov et al., 1999; Karlsson et al. 2016). However, there is a lack of research about the correlation between prenatal stress and development of multiple anaphylactic allergies. Throughout a decade of clinical practice and the treatment of over three dozen of severely allergic children, I have seen a clear correlation between the two. This article is an attempt to explain and demonstrate this correlation. Educating our patients about the impact of stress is crucial if we want to slow down the epidemic of allergies. The more documented data we have, the better the case we can make when advocating both to our patients and to other healthcare practitioners about the care of their prenatal patients. Furthermore, we should not ignore the possible impact of the elimination of childhood diseases and the introduction of more and more vaccines at a very early age. We should encourage our patients to do their own research and make an informed decision when it comes to vaccinating their children.

Mor Balaban earned her Doctor of Acupuncture and Chinese Medicine from Pacific College of Oriental Medicine (PCOM) in 2016 and her Master of Science with honours in Traditional Oriental Medicine from PCOM in 2006. She is a board-certified herbalist and a licensed acupuncturist in New York and New Jersey (NJ), as well as a NAET and Gate Healing Method practitioner. Dr. Balaban is an adjunct faculty member at PCOM and she owns and operates a private practice in Closter, NJ with the specialties of paediatrics, allergies and immunology.

References

- Anderson, H. R., J. D. Poloniecki, D. P. Strachan, R. et al. (2001). "Immunization and Symptoms of Atopic Disease in Children: Results from the International Study of Asthma and Allergies in Childhood", *American Journal of Public Health* 91(7), pp.1126–29
- Berger, A. (2000). "Th1 and Th2 Responses: What Are They?", *British Medical Journal* 321(7258) p.424
- CDC (2013). "Trends in allergic conditions among children: United States, 1997–2011", *Data Brief* No 121, May 2013
- CDC (2017). "Monitoring the Impact of Varicella Vaccination" 2017. Available at <<https://www.cdc.gov/chickenpox/surveillance/monitoring-varicella.html>> [Accessed 04/09/17]
- Chad, Z. (2001). "Allergies in Children", *Paediatrics & Child Health* 6(8), p.555–566
- Cooper, L. (2011). "Understanding Pregnancy Hormones". *Babble*. Available at <<https://www.babble.com/pregnancy/pregnancy-understanding-your-hormones/>> [Accessed 04/09/17]
- Elenkov, I.J., Webster, E.L., Torpy, D.J. et al. (1999). "Stress, Corticotropin-Releasing Hormone, Glucocorticoids, and the Immune/Inflammatory Response: Acute and Chronic Effects", *Annals of the New York Academy of Sciences* 876, pp.1–13
- Flanigan, C., Sheikh, A. & Nwaru, B.I. (2016). "Prenatal Maternal Psychosocial Stress and Risk of Asthma and Allergy in Their Offspring: Protocol for a Systematic Review and Meta-Analysis", *NPJ Primary Care Respiratory Medicine*, 26: 16021
- Karlsson, L., Nousiainen, N., Scheinin, N.M. et al. (2016). "Cytokine Profile and Maternal Depression and Anxiety Symptoms in Mid-Pregnancy. The FinnBrain Birth Cohort Study", *Archives of Women's Mental Health*, October. doi:10.1007/s00737-016-0672-y
- McKeever, T.M., Lewis, S.A., Smith, C. & Hubbard, R. (2004). "Vaccination and Allergic Disease: A Birth Cohort Study", *American Journal of Public Health*, 94(6) pp.985–89.
- Plechner, A.J. (2004). "Cortisol Abnormality as a Cause of Elevated Estrogen and Immune Destabilization: Insights for Human Medicine from a Veterinary Perspective", *Medical Hypotheses*, 62(4), pp.575–81.
- Sausenthaler, S., Koletzko, S., Schaaf, B. et al. (2007). "Maternal Diet during Pregnancy in Relation to Eczema and Allergic Sensitization in the Offspring at 2 Y of Age", *The American Journal of Clinical Nutrition*, 85(2), pp.530–37.
- Trump, S., Bieg, M., Gu, Z.G. et al. (2016). "Prenatal Maternal Stress and Wheeze in Children: Novel Insights into Epigenetic Regulation", *Scientific Reports*, 6: 28616