

MATERNAL EMOTIONAL STATES AND PRENATAL CARE

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At a time when we are learning that our health is to a great extent shaped in the womb, nothing is more important than to study the factors that can influence fetal growth and fetal development. Among these factors we must look in particular at the emotional states of pregnant woman.

From intuitive knowledge to scientific knowledge

In many traditional societies they had an intuitive knowledge of the effects of maternal emotional states on fetal development. It was well understood that the duty of the community is to protect the emotional states of pregnant women. For example I heard that in an ethnic group of Western Amazonia they transmit the belief that people should avoid to argue with a pregnant woman, and, if by chance they start arguing, they should always make sure that the mother-to-be would have the last word.

Today it is easy to explain, from the physiological perspective, how the emotional state of a pregnant woman can influence the growth of her baby. Let us take, as an example, an emotional state associated with a high level of cortisol. This is the case of women who feel dominated by somebody (e.g. an authoritarian husband) or by a situation (e.g. an unwanted pregnancy). Typically, they can neither escape nor fight. They are depressed and unhappy. It is well known that cortisol is an inhibitor of fetal growth, even if the placenta can to a certain extent moderate this effect via an enzyme that transforms the active cortisol into inactive cortisone.

Furthermore there is an accumulation of epidemiological studies, in the framework of primal health research, which demonstrate the life-long consequences for the child of the emotional states of the mother when she was pregnant. Go to www.birthworks.org/primalhealth and type keywords such as unwanted pregnancy, bereavement, emotional state in pregnancy, fatherless children, criminality, alcoholism, mental diseases, antisocial behavior, schizophrenia, etc.

Practical implications.

In our society, since the advent of medicalized prenatal care, the emotional state of pregnant women is highly influenced by health professionals, particularly doctors. We can therefore assume that, in an ideal world, the main preoccupation of doctors and other health professionals involved in prenatal care should be to protect the emotional state of pregnant women. However everybody heard of countless women who were unsettled and apprehensive after an antenatal visit. It is obvious that the dominant style of antenatal care – constantly focusing on potential problems – has an inherent ‘nocebo effect’. The nocebo effect is a negative effect on the emotional state of pregnant women and indirectly of their families. It occurs whenever a health professional makes more harm than good by interfering with the imagination, the fantasy life or the beliefs of a patient or a pregnant woman.(1,2,3)

It should not take so long for an adaptable health professional to shift towards a positive attitude and to overcome the current situation. Modern pregnant women cannot be blissful. All of them have at least one reason to be worried: "your blood pressure is too high or too low", "your weight is increasing too quickly or too slowly", "you are anaemic", "you might hemorrhage because your platelet count is low", "you have a gestational diabetes", "your baby is too small or too big", "there is too much liquid around the baby", "there is a lack of liquid", "the placenta is low", "you are 18 and teen-age pregnancy is associated with specific risks", "you are 39 and pregnancy at an old age is associated with specific risks", "your baby has not yet turned head first", "the baby's back is on the right side, which makes the birth difficult", "according to the blood sample you are at risk of having a Down's syndrome baby", "you did not take folic acid at the right time and we must consider the risk of spina bifida", "you are not immunised against rubella", "you are Rh negative", "if you have not given birth on Wednesday, we must consider an induction", etc. Is it still possible to be a "normal" woman?

In the same ideal world, the expectant mother should be guided by a primary practical question: "What can the doctor do for me and my baby?" If we consider the usual case of a woman who knows that she is pregnant, who knows roughly when her baby was conceived, who has no reason for complaint, the humble response should be: "Not a lot, apart from detecting a gross abnormality and offering an abortion".

Should we reconsider the concept of routine medicalized prenatal care?

In many countries about ten prenatal visits is routine. In other words, most women have ten opportunities to hear about potential problems. At each visit a battery of tests is offered. These traditional patterns of medical care are based on the belief that more antenatal visits mean better outcomes. They are not based on scientific data. That is why the very concept of routine medicalized care and the number of visits

must be re-examined.

British studies failed to find any association between beginning prenatal care late and adverse outcomes for the mother or the baby (4) or between the number of visits and the onset of the disease eclampsia (5). This casts doubts on the efficacy of such protocols. Within the British National Health Service, the number of visits is not as strongly associated with socio-economic status as it is in the USA. This makes the results of the British studies comparatively easier to interpret than those of the American studies (6,7).

However, it is worth analyzing a 2002 report by the 'Center for Disease Control and Prevention' in the USA. It appears that women who were born outside the USA are more likely than their racial and ethnic counterparts born in the USA to begin prenatal care late or to have no prenatal care at all. 'In spite of that' (or perhaps 'because of that'?) state born women are more likely than their counterparts born outside the United States to give birth preterm or to give birth to a low weight baby. It is also fruitful to analyze trials comparing different schedules of antenatal visits. One was conducted in California, in a Kaiser Permanente Medical Center (8). A second trial, in South East London, involved 2794 women (9). A third one, by the World Health Organization, involved 53 centres in Thailand, Cuba, Saudi Arabia and Argentina (10). None of these trials demonstrated any benefits of conventional schedules compared with reduced visit schedules.

One may also wonder if women who have a great number of antenatal visits give birth more easily than those with none. A study on the effect of cocaine use on the progress of labour unexpectedly suggested the opposite (11). The researchers took into account that one-third of cocaine users had no prenatal care. It was therefore essential to determine the average dilation at admission among nonusers of cocaine who had no prenatal care. It appeared that the mean dilation at admission in this group was more than 5 cm.

Should we reconsider the content of prenatal visit?

Not long ago the main reason for the first antenatal visit was to establish the diagnosis of pregnancy and to determine the due date. Since reliable pregnancy tests can now be bought over-the-counter, most women have their pregnancy confirmed before visiting a health professional and have a reliable date of conception. Knowing that a pregnancy lasts about nine months, most women can calculate the most probable time for the birth of their baby. One can therefore claim that the primary reason for an early antenatal visit has disappeared.

Routine ultrasound scanning in pregnancy became the symbol of modern prenatal care. It is also its most expensive component. A series of studies compared the effects on birth outcomes of routine ultrasound screening versus the selective use of the

scans. An American trial involved more than 15,000 pregnant women (12). The last sentence of the article is unequivocal: “The findings of this study clearly indicate that ultrasound screening does not improve perinatal outcome in current US practice”. Around the same time, an article in British Medical Journal (13) assembled data from four other comparable trials. The authors concluded: “Routine ultrasound scanning does not improve the outcome of pregnancy in terms of an increased number of live births or of reduced perinatal morbidity. Routine ultrasound scanning may be effective and useful as a screening for malformation. Its use for this purpose, however, should be made explicit and take into account the risk of false positive diagnosis in addition to ethical issues”.

It is possible that, in the future, a new generation of studies (in the framework of primal health research) will cast doubts on the absolute safety of repeated exposure to ultrasound during fetal life. One of the effects of the selective use is to reduce dramatically the number of scans, particularly in the vulnerable phase of early pregnancy.

Even in a high risk population of pregnant women, ultrasound scans are not as useful as commonly believed. Evidence from several trials suggests that sonographic identification of fetal growth retardation does not improve outcome despite increased medical surveillance (14,15). In diabetic pregnancies it has been demonstrated that ultrasound measurements are not more accurate than clinical examination to identify high birth weight babies (16). This led to the memorable title of an editorial of British Journal of Obstetrics and Gynaecology: ‘Guess the weight of the baby’.

In many countries, the amount of red blood cells pigment (haemoglobin concentration) is routinely measured in pregnancy. There is a widespread belief that this test can effectively detect anaemia and iron deficiency. In fact, this test cannot diagnose iron deficiency because the blood volume of pregnant women is supposed to increase dramatically, so the haemoglobin concentration indicates first the degree of blood dilution, an effect of placental activity. A large British study, involving more than 150,000 pregnancies (17), found that the highest average birth weight was in the group of women who had a haemoglobin concentration between 8.5 and 9.5. Furthermore, when the haemoglobin concentration fails to fall below 10.5 there is an increased risk of low birth weight, preterm birth and pre-eclampsia. The regrettable consequence of routine evaluation of haemoglobin concentration is that, all over the world, millions of pregnant women are wrongly told that they are anaemic and are given iron supplements. There is a tendency both to overlook the side effects of iron (constipation, diarrhea, heartburn, etc.) and to forget that iron inhibits the absorption of such an important growth factor as zinc (18). Furthermore, iron is an oxidative substance that can exacerbate the production of free radicals and might even increase the risk of pre-eclampsia (19).

Another routine screening practiced in certain countries is for so-called gestational

diabetes. This is the reason for using the glucose tolerance test. If the glycaemia (amount of glucose in the blood) is considered too high after absorption of sugar, the test is positive. This diagnosis is useless because it merely leads to simple recommendations that should be given to all pregnant women. These are recommendations regarding lifestyle, particularly dietary habits and exercise. Dietary recommendations must focus on the quality of carbohydrates. The most useful way to rank foods is according to their 'glycaemic index'. Pregnant women must be encouraged to prefer, as far as possible, low glycaemic index foods. A food has a high index when its absorption is followed by a fast and significant increase of the blood glucose level. In practice this means, for example, that pregnant women must avoid the countless soft drinks that are widely available today, and that they must also avoid adding too much sugar or honey in their tea or coffee. Glycaemic index tables of hundreds of foods have been published in authoritative medical journals. These tables must be looked at carefully, because the data they provide are often surprising for those who are still influenced by old classifications contrasting simple sugars and complex carbohydrates. Such classifications were taking account the mere chemical formula.

From such tables we can learn in particular that breakfast cereals based on oats and barley have a low index. Wholemeal bread and pasta also are low-index foods. Potatoes and pizzas, on the hand, have a high index and should therefore be consumed with moderation. Comparing glucose and fructose (the sugar of fruit) is a way to realize the lack of correlation between chemical formula and glycaemic index. Both are small molecules with six atoms of carbon and have pretty similar chemical formulas. Yet the index of glucose is 100...versus 23 for fructose. This means that pregnant women must be encouraged to eat fruit and vegetables.

The benefits of a regular physical activity in pregnancy should also be a routine discussion during prenatal visits, whatever the results of sophisticated tests. A huge Canadian study demonstrated that the only effect of routine glucose tolerance screening was to inform about three per cent of pregnant women that they have gestational diabetes (20). The diagnosis did not change the birth outcomes.

Even the routine measurement of blood pressure in pregnancy may be reconsidered. Its original purpose was to detect the preliminary signs of pre-eclampsia, particularly at the end of a first pregnancy. But increased blood pressure, without any protein in the urine, is associated with good birth outcomes (21,22,23,24). The prerequisite, to diagnose pre-eclampsia, is the presence of more than 300 mg of protein in the urine per 24 hours. Finally, it is more useful to rely on the repeated use of the special strips for 'urinalysis' one can buy in any pharmacy. Measuring the blood pressure is thus not essential.

After challenging the very principle of routine medicalized care in pregnancy and after evaluating the content of antenatal visits, we can explore the issue from a third

perspective. We can wonder what the doctor can do after the conception of a baby, in order to influence outcomes. Since prematurity is a major preoccupation, let us focus on what medical care can offer in order to reduce the incidence of preterm births. Recently, considerable research focused on the potential for antibiotic prophylaxis. A large trial involving more than 6000 women did not support the use of antibiotics (25). Furthermore, the treatment of vaginal infection in early pregnancy does not decrease the incidence of preterm delivery (26). Surgical closure of the cervix ('cerclage') has been widely used in order to reduce the risk of premature birth especially in cases of a short and 'incompetent' cervix. In fact, the data conflict about the value of this technique, which reportedly doubles the risk of fever after the birth of the baby (27). Medical interventions also do not reduce the risk of having a small-for-date baby. Even bed rest restrictions are useless and even harmful.

The future

We should not conclude that there is no need at all for medical visits in pregnancy: we cannot make a comprehensive list of all the reasons why women might need the advice or the help of a qualified health professional before giving birth. It is the word 'routine' that should be discarded. It is easy to explain why the current habits are a waste of time and money; it is also easy to explain why they are potentially dangerous. It is dangerous to misinterpret the results of a routine test and to tell a healthy pregnant woman that she is anaemic and that she needs iron supplements. It is dangerous to present an isolated increased blood pressure measurement as bad news. It is dangerous to tell a pregnant woman that she has a 'gestational diabetes'.

The fall of routine medicalized antenatal care should go along with a rediscovery of the basic needs of pregnant women. We cannot dissociate the physiological changes in pregnancy and birth physiology. It is as if the birth process was physiologically prepared long in advance. We must give a great importance to a study demonstrating that, during pregnancy, there is a significant reduction of the blood flow in the large arteries going to the brain.(28) Is the pregnant woman preparing herself to reduce the activity of her neocortex in order to make the birth possible?

One of the needs of pregnant women is to socialize and share their experiences. It is easy to create occasions for that: swimming, yoga, prenatal exercise sessions... I well remember the atmosphere of happiness that accumulated during singing encounters in the maternity unit at the Pithiviers Hospital in France. These singing sessions probably had more positive effects on the development of babies in the womb and also on the birth process than a series of ultrasound scans.(29)

References:

1 - Odent M. The Nocebo effect in prenatal care. Primal Health Research Newsletter 1994; 2 (2).

- 2 - Odent M. Back to the Nocebo effect. Primal Heath Research Newsletter 1995; 5 (4).
- 3 - Odent M. Antenatal scare. Primal Heath Research Newsletter 2000; 7 (4).
- 4 – Thomas P, Golding J, Peters TJ. Delayed antenatal care: does it affect pregnancy outcome? Soc Sci Med 1991; 32: 715-23.
- 5 – Douglas KA, Redman CW. Eclampsia in the United Kingdom. BMJ 1994; 309: 1395-400.
- 6 – Vintzileos AM, Ananth CV, et al. The impact of prenatal care in the United States on preterm births in the presence or absence of antenatal high-risk conditions. Am J Obstet Gynecol 2002; 187: 1254-7.
- 7 – Vintzileos AM, Ananth CV, et al. The impact of prenatal care on postneonatal deaths in the presence or absence of antenatal high-risk conditions. Am J Obstet Gynecol 2002; 187: 1258-62.
- 8 – Binstock MA, Wolde-Tsadik G. Alternative prenatal care: impact of reduced visit frequency, focused visits and continuity of care. J Reprod Med 1995; 40: 507-12.
- 9 – Sikorski J, Wilson J, et al. A randomised controlled trial comparing two schedules of antenatal visits: the antenatal project. BMJ 1996; 312: 546-53.
- 10 – Villar J, Baaqueel H, et al. WHO antenatal care randomized trial for the evaluation of a new model of routine antenatal care. Lancet 2001; 357: 1551-64.
- 11 – Wehbeh H, Matthews RP, et al. The effect of recent cocaine use on the progress of labor. Am J Obstet Gynecol 1995; 172: 1014-8.
- 12 – Ewigman BG, Crane JP, et al. Effect of prenatal ultrasound screening on perinatal outcome. N Engl J Med 1993; 329: 821-7
- 13 – Bucher HC, Schmidt J G. Does routine ultrasound scanning improve outcome in pregnancy? Meta-analysis of various outcome measures. BMJ 1993; 307: 13-7.
- 14 – Larson T, Falck Larson J, et al. Detection of small-for-gestational-age fetuses by ultrasound screening in a high risk population: a randomized controlled study. Br J Obstet Gynaecol 1992; 99: 469-74.
- 15 – Secher NJ, Kern Hansen P, et al. A randomized study of fetal abdominal diameter and fetal weight estimation for detection of light-for-gestation infants in low-risk pregnancy. Br J Obstet Gynaecol 1987; 94: 105-9.
- 16 – Johnstone FD, Prescott RJ, et al. Clinical and ultrasound prediction of macrosomia in diabetic pregnancy. Br J Obstet Gynaecol 1996; 103: 747-54.
- 17 - Steer P, Alam MA, Wadsworth J, Welch A. Relation between maternal haemoglobin concentration and birth weight in different ethnic groups. BMJ 1995; 310:489-91.
- 18 - Valberg LS. Effects of iron, tin, and copper on zinc absorption in humans. Am J Clin Nutr 1984; 40:536-41.
- 19 – Rayman MP, Barlis J, et al. Abnormal iron parameters in the pregnancy syndrome preeclampsia. Am J Obstet Gynecol 2002; 187 (2): 412-8.
- 20 - Wen SW, Liu S, Kramer MS, et al. Impact of prenatal glucose screening on the diagnosis of gestational diabetes and on pregnancy outcomes. Am J Epidemiol 2000; 152(11): 1009-14.
- 21 - Symonds EM. Aetiology of pre-eclampsia: a review. J R Soc Med 1980; 73:

871-75.

22 - Naeye EM. Maternal blood pressure and fetal growth. *Am J Obstet Gynecol* 1981; 141: 780-87.

23 - Kilpatrick S. Unlike pre-eclampsia, gestational hypertension is not associated with increased neonatal and maternal morbidity except abruptio. SPO abstracts. *Am J Obstet Gynecol* 1995; 419: 376.

24 - Curtis S, et al. Pregnancy effects of non-proteinuric gestational hypertension. SPO Abstracts. *Am J Obst Gynecol* 1995; 418: 376.

25 – Kenyon SL, Taylor DJ, Tarnow-Mordi W. Broad spectrum antibiotics for spontaneous preterm labour: the ORACLE II randomized trial. *Lancet* 2001; 357: 989-94.

26 – Guise JM, Mahon SM, et al. Screening for bacterial vaginosis in pregnancy. *Am J Prev Med* 2001; 20 (suppl 3): 62-72.

27 – MRC/RCOG Working party on cervical cerclage. Final report of the Medical Research Council/Royal College of Obstetricians and Gynaecologists multicentre randomized trial of cervical cerclage. *BJOG* 1993; 100: 516-23.

28 – Zeeman GZ, Hatab M, Twickler DM. Maternal cerebral blood flow changes in pregnancy. *Am J Obstet Gynecol* 2003; 189(4):

29 – Odent M. *Birth Reborn*. Pantheon (NY). 1984.

