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THE RISE OF PRECONCEPTIONAL COUNSELLING VS THE DECLINE OF MEDICALIZED CARE IN PREGNANCY

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When one knows at which point prematurity and low birth weight increase mortality, morbidity, and life long handicaps, one cannot imagine a more important study than the one published by SF Olsen and NJ Secher in British Medical Journal (1) on February 23, 2002. In this study 8729 pregnant Danish women were interviewed about their dietary habits and were classified according to their consumption of fish. The rates of prematurity varied from 1.9% in the group eating fish at least once a week to 7.1% in the zero consumption group! The same outcome was noted for low birth weight.

In a subsequent issue of British Medical Journal (2) I raised the obvious practical question inspired by this study: should we routinely encourage all pregnant women to consume or to increase their consumption of sea fish? I recalled that between 1991-92, in the antenatal clinic of Whipps Cross Hospital in East London, we encouraged a random selection of 499 pregnant women (before 20 weeks) to increase their consumption of sea fish (3). Each woman was matched with a control who had had the same number of births. We could not detect any significant effect of our dietary recommendations in the perinatal period in terms of birth weight and duration of pregnancy. We repeated similar studies in three different contexts: a French university hospital (Rennes), a Dutch midwifery practice (Boxtel) and another hospital in east London (Newham). We were not encouraged to enlarge these studies because, once more, significant effects could not be detected in the perinatal period.

The point is that Olsen and Secher assessed dietary habits that preceded to a great extent the beginning of pregnancy. It is probable that dietary recommendations in antenatal clinics occur too late to have detectable effects in the perinatal period.

Many people associate the word ‘fish’ with ‘pollution’. This may explain why these studies are not better known and why capsules of fish oil are often recommended instead to pregnant women. However, small fish that live in the high sea (beginning of the sea food chain) are not polluted and are the richest in omega 3. These include sardines,

pilchards, anchovies, herrings, etc.; all safe (and cheap). We must also emphasize that eating fish is not the same as taking capsules of fish oils. It is more than consuming long chain omega 3 fatty acids. It also provides high quality proteins and a good balance in minerals. Many of these minerals (e.g. selenium and zinc) tend to be more scarce than in the past in the land food chain. Furthermore when people eat fish they automatically reduce the amount of other kinds of food (a difference with supplements).

Interpreting the apparent contradiction between the results of the Danish study and the results of our studies raises questions regarding the relative importance of routine medicalized care in pregnancy and preconceptional counselling.

IS ROUTINE MEDICALIZED CARE IN PREGNANCY WORTHWHILE?

In many countries about 10 prenatal visits is routine. Each visit offers an opportunity for a battery of tests. 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.

An examination of the concept of routine medicalized care

British studies failed to find any association between late enrollment in prenatal care (after 28 weeks gestation) and either adverse maternal or neonatal outcomes (4) or between the number of visits and the onset of 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 the CDC's Morbidity and Mortality Weekly report dated December 6, 2002 (CDC = Center for Disease Control and Prevention in the U.S.). It appears that women who were born outside the U.S. are more likely than their racial and ethnic counterparts born in the U.S. 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 (11.9% versus 10.5%) or to give birth to a low weight baby (7.9% versus 6.4%).

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 WHO, 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. For obvious reasons, a randomized trial is impossible. 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, versus 4% of nonusers. 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 5.4 cm, whereas it was 3.8 among those who had more than four antenatal visits (it was 4.63 for cocaine users).

Reconsidering the content of antenatal visits

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. One of these randomized trials, published in New England Journal of Medicine, involved 15,151 pregnant women (12). The last sentence of the article is unequivocal: "Whatever the explanation proposed for its lack of effect, 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 randomized trials (meta-analysis). 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 randomized controlled 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 (hemoglobin 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 hemoglobin concentration indicates first the degree of blood dilution, an effect of placental activity. A large British study, involving 153,602 pregnancies (17), found that the highest average birth weight was in the group of women who had a hemoglobin concentration between 8.5 and 9.5. Furthermore, when the hemoglobin 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 hemoglobin 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 lipid peroxidation (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, such as: avoid pure sugar (including soft drinks, sodas, etc.), choose complex carbohydrates (pasta, bread, rice, etc.), and have a sufficient amount of physical exercise. A huge Canadian study demonstrated that the only effect of routine glucose tolerance screening was to inform 2.7% 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.

What can the doctor offer?

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 multicentre randomised controlled trial involving 6295 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). Cerclage of the cervix 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 postpartum fever (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.

From the point of view of the expectant mother the primary question should be: "What can the doctor do for me and my baby, since I already know I am pregnant and I can feel the baby growing?" The doctor should answer with humility: "Not a lot, apart from detecting a gross abnormality and offering an abortion".

THE RISE OF PRECONCEPTIONAL COUNSELLING

At the same time, when we have the data exposing routine medicalized prenatal care as a huge waste of time and money, we are constantly pressured to focus on what can be done

before conception. Today it is beyond doubt that prevention of abnormalities such as spina bifida is effective before conception; almost everybody has heard about folic acid. In terms of nutrition we emphasized the facts revealed by comparing the Danish study and our own studies of fish consumption. An accumulation of data provided by a great variety of medical disciplines indicates what should be considered the main threat for the health of the unconceived generations: the intrauterine pollution by synthetic fat soluble chemicals that accumulate over the years in human adipose tissues. The foundation of any preconceptional programme such as our 'accordion method' must be to reduce the body burden of synthetic pollutants before conceiving a baby(28). The same issue concerns the father-to-be since the development of the concept of "male-mediated developmental toxicity": it appears today that certain diseases or developmental disorders occur more frequently when the man has been exposed to certain pollutants.

The good news is that there is already a group of people (mostly women) who, on the one hand, are aware of the limits of the role of medicine in pregnancy and who recognize, on the other hand, the enormous potential of preconceptional preparation. Thanks to their motivation and generosity the Primal Health Research Centre is now in a position to conduct a long-awaited study in order to answer a simple question: "How effective is the accordion method?"

THE FUTURE

How long will it take to develop an interest for the health of the unconceived generations? If we had the answer to this question we could anticipate how long it will take to balance the relative importance of preconceptional counselling and antenatal care. Recent studies indicate how far our responsibility extends concerning the health of future generations. Researchers took into account the food available during a period of poverty in Swedish history (1890) compared with times of greater and greater affluence (1905,1920). The conclusion is that the risk of dying from diabetes is significantly higher if the paternal grandfather was exposed to a surfeit of food in childhood (29).

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'. In general, it is the very style of medicalized prenatal care, constantly focusing on potential problems, which has a strong "nocebo effect"(30, 31, 32).

The fall of routine medicalized antenatal care should go along with a rediscovery of the basic needs of pregnant women. I well remember the atmosphere of happiness that accumulated during singing evenings 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 than a series of ultrasound scans. Pregnant women need to socialize and share their experiences. It is easy to create occasions for that: swimming, yoga,

prenatal exercise sessions…Let us dream of the potential of specialized restaurants for parents-to-be!

Michel Odent

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