

O24 - Comunicación Oral/Oral communication

Salud reproductiva

Reproductive health

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Moderador/Chairperson:
Gerhard Zielhuis y Gloria Pérez

MATERNAL MYO-INOSITOL, GLUCOSE AND ZINC STATUS IS ASSOCIATED WITH SPINA BIFIDA IN THE OFFSPRING

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Introduction: Spina bifida is among the most common congenital defects in man. Nutritional factors such as folic acid have been implicated in the pathogenesis of this birth defect. Epidemiological and experimental studies suggested that myo-inositol, glucose and zinc are also involved in the pathogenesis of spina bifida. Therefore, the maternal and children's myo-inositol, glucose and zinc status was studied in association with spina bifida.

Methods: In a case-control setting 76 case-mothers and their child were enrolled in collaboration with the Dutch Spina Bifida Teams. One hundred and eleven control-pairs were recruited from midwifery's, nurseries and acquaintances of the case-mothers in Nijmegen and surroundings. Blood samples were obtained to determine serum myo-inositol, serum glucose and red blood cell zinc concentrations. The association with spina bifida was expressed by the ratio of geometric means and by odds ratio and 95% confidence interval (OR (95% CI)) for a cut-off value at the extreme 10th percentile of the control group.

Results: After applying the exclusion criteria 63 mothers and 70 children with spina bifida and 102 control mothers and 85 children entered the analyses. The geometric mean of the maternal myo-inositol concentration tended to be 5% (95% CI, -1%-11%) lower in cases. Glucose and zinc concentrations were 7% (95% CI, 4%-10%) higher and 5% (95% CI, 0%-9%) lower, respectively in case-mothers compared with control-mothers. The crude ORs (95% CI) were for maternal myo-inositol 2.6 (1.1-6.0), glucose 4.6 (2.0-10.5) and zinc 2.9 (1.2-7.0). Adjustment for current maternal body mass index, multivitamin use, smoking, alcohol use, educational level did not change the crude ORs. The geometric mean of the myo-inositol concentration tended to be 7% (95% CI, 0%-14%) lower in spina bifida children and the glucose and zinc concentrations were not significantly different between the groups. However, adjustment for child's age attenuated this tendency.

Conclusions: This study provides evidence that periconceptional maternal myo-inositol, glucose and zinc status are associated with the occurrence of spina bifida in man. Whether derangements in the metabolism or transfer of these nutrients in the mother or child, and/or an unbalanced diet is involved needs further investigation. Moreover, this study raises the possibility of using myo-inositol as an adjuvant therapy to folic acid for the prevention of spina bifida in man.

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BIRTH OUTCOMES AMONG SUBFECUND COUPLES

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Introduction: Although 10-15% of all babies are born to subfecund couples, remarkably few studies have examined their birth outcomes. Couples who achieve pregnancy with in vitro fertilization procedures are at increased risk of giving birth prematurely. Adverse effects of treatment have been speculated, but the underlying causes of infertility may also cause problems during gestation and contribute to preterm birth. In this study we examine the risk of preterm delivery and the fetal growth pattern in relation to subfecundity among couples in the Danish National Birth Cohort. Subfecundity is defined by self-reported time to pregnancy (TTP) collected prior to birth.

Methods: Using interview data collected in the second trimester of pregnancy among women taking part in the Danish National Birth Cohort, we identified 55907 singleton live babies born to women who had reported whether their pregnancy was planned and how long they had taken to conceive (right away, 1-2 months, 3-5 months, 6-12 months, and longer than 12 months). Information on several potential confounders (parity, pre-pregnancy body mass index, smoking, age at menarche, and length of cycle) was also derived from this interview. Mother's age at birth and sex of the baby were obtained from the birth record. We examined whether the risk of preterm delivery was associated with TTP using logistic regression. In addition, we assessed whether birth weight (adjusted for gestational age) varied with TTP using linear regression.

Results: The adjusted risk of preterm delivery was higher in women taking longer than 12 months to conceive compared to women who conceived right away (OR=1.4, 95% CI: 1.1, 1.7 for primiparas and 1.8, 95% CI: 1.4, 2.3 for multiparas). After detailed adjustment for gestational age (15 categories), we estimated that babies born to infertile primiparas were 20 grams lighter on average (95% CI: 0, 40) than babies whose mother conceived right away. The reduction in the average birth weight was more pronounced in infertile multiparas, whose babies were 47 grams lighter (95% CI: 27, 68) than babies of women who conceived right away. In total, 40.3% of the infertile women reported receiving some form of infertility treatment. When they were excluded, the results did not change substantially.

Conclusions: Subfecund couples had an increased risk of preterm delivery that could not be attributed to infertility treatment. Since preterm delivery is the most important cause of infant morbidity and mortality and a substantial proportion of babies are born to subfecund couples, it is important to consider this as a risk factor when providing prenatal care and to attempt to understand how it contributes to preterm birth.

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IS STRESS DURING PREGNANCY A CAUSE OF ATTENTION DEFICIT AND HYPERACTIVITY PROBLEMS?

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Introduction: Attention deficit hyperactivity disorder (ADHD) is one of the most prevalent childhood psychiatric disorders. Animal studies suggest that stress in pregnancy cause behavioural conducts that resembles ADHD in the offspring. An influence of the hormonal response to stress on the fetal brain is possible, but human evidence for such an effect is sparse. We investigated the association between foetal exposure to stress and ADHD related behaviour in childhood.

Methods: We conducted a follow up study of 4031 Danish speaking women who gave information on stressful life events in early second and mid third trimester of pregnancy. Behaviours related to the diagnosis of ADHD was collected when children were 9 to 11 years old by questionnaires sent to parents. We used a 12-item 'ADHD problem scale' developed in a Danish setting, and based on the most widely used questionnaire to identify psychopathology in childhood, the child behaviour checklist (CBCL).

Results: A high ADHD problem score was found in 5% of the girls and 10% of the boys. Women, who reported stressful life events during pregnancy gave birth to children with a higher risk of ADHD related symptoms, especially in boys. The number of life events the mother experienced in the second trimester of pregnancy was associated to high ADHD scores in a dose-response like fashion (test for trend, $P < 0.01$). Stressful life events in early pregnancy were not associated with a high ADHD score. If the child was a girl, a high ADHD score was found in offspring of mothers who reported more than one life events in first as well as second trimester of pregnancy (OR=2.3; 95% CI: 1.3-4.2).

Conclusions: Stress in pregnancy was associated with attention problems in the offspring. The mechanism behind this finding may be a hormonal mediated influence the fetal brain.

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MICROCHIMERISM - AN EXPOSURE LOOKING FOR A DISEASE BUT THE ROAD IS PAVED WITH PROBLEMS

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Introduction: It has not been well-documented that there is a traffic of cells between the fetus and the mother during pregnancy. Transferred cells from the fetus may persist for years and could induce a biological response and in principle it could have causal or preventive effect for several diseases. The response is expected to be dependent upon paternal genes and therefore modified by the number of partners the woman uses in her procreation. "The healthy pregnancy effect" makes it difficult to study the health consequences of a pregnancy per se, but studying the effect of having multiple partners will to some extent bypass "the healthy pregnancy effect". Giving birth to children using two or more partners may, however, be associated with other risk factors of importance, and this problem is a subject for analysis in the presentation.

Methods: We compared total and cause specific mortality in 64,704 women who gave birth to two or more children with different partners. We compared the mortality with results from 86,624 women with similar parity, who had all the children with the same father. We used several population registers in order to establish these cohorts.

Results: We found a substantially higher mortality rate in women who had several partners. This difference persisted after excluding unnatural death and did not depend upon time from exposure. Unnatural death was 2.6 times higher in women who had multiple partners. They had a two-fold increased mortality rate of cancer of the genital organs.

Conclusion: Giving birth to children with different fathers is apparently a risky matter. We believe that part of this risk (perhaps all) belongs to the domain of lifestyle confounding rather than microchimerism. The existing epidemiologic studies of microchimerism have not taken these problems into proper consideration.

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RISK-ADJUSTMENT OF CAESAREAN SECTION DELIVERY RATES IN CATALONIA, SPAIN

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Background and Aim: Caesarean section (C-section) has been widely scrutinised. Numerous studies have shown variation in C-section delivery rates. Because of this variation it was suggested that some C-section deliveries are unnecessary or performed without apparent indication. The purpose of this study was to compare C-section delivery rate and risk of pregnancy outcome in women receiving public and private obstetric care in Catalonia, Spain.

Methods: We used data from the Live Births Register of Mother and Child Programme (Public Health General Directorate, Department of Health and Social Security), which is a population-based register between 1997 and 2001 (total amount of live births 302,274). We calculate C-section delivery rates per 100 live births adjusted by women age, type of hospital and delivery outcomes. We adjusted two logistic regression models to compute the odds ratio (OR) and 95% confidence interval (CI) according to selected variables: maternal age in years (< 20, 20-34, >34), previous parity (first pregnancy, 1-3, ≥ 4), preterm delivery in gestational weeks (< 37, ≥ 37), birth weight in grams (< 2500, ≥ 2500), multiple gestation (yes/no), type of hospital (public/private), level of hospital (basic, intermediate, technologic) and C-section delivery (yes/no). In the first model the dependent variable was 'caesarean section delivery', in the second model the dependent variable was delivery at private hospitals.

Results: The C-section delivery rate was 29.6%: 25.5% in public hospital and 39.3% in private hospital. We observed an increasing trend of C-section delivery rate with age: 16.6% in < 20 years and 33.4% in > 34 years. The pregnancy outcomes and characteristics associated with C-section delivery were the absence of previous pregnancy (OR=2.69; 95% CI: 2.21-3.28), previous parity between 1 and 3 (OR=1.96; 95%CI: 1.62-2.38), low birth weight (OR=1.50; 95%CI: 1.37-1.64), preterm delivery (OR=1.54; 95% CI: 1.40-1.68), multiple gestation (OR=2.58; 95% CI: 2.32-2.87), private hospital (OR=1.57; 95% CI: 1.49-1.64) and women aged more than 34 years old (OR=2.69; 95% CI: 2.21-3.28). The characteristics associated with delivering at a private hospital were the absence of previous pregnancy (OR=5.09; 95%CI: 3.88-6.70), previous parity between 1 and 3 (OR=3.61; 95%CI: 2.75-4.75) basic hospital (OR=3.83; 95% CI: 3.60-4.08) or intermediate hospital (OR=2.35; 95%CI: 2.21-2.51), women between 20 and 34 years old (OR=8.09; 95% CI: 5.84-11.21), women aged more than 34 years old (OR=14.64; 95%CI: 10.54-20.33) and C-section delivery (OR=1.56; 95%CI: 1.49-1.64).

Conclusion: International comparisons show private hospital C-section delivery rate to have among the highest rates. Women receiving private obstetric care have higher chance of C-section even with low risk of pregnancies outcomes.

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QUALITY OF LIFE IN A RANDOMISED TRIAL OF POSTMENOPAUSAL HORMONE TREATMENT

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Introduction: The effect of continuous combined hormone treatment on quality of life of women without menopausal symptoms is not well known. The purpose of this study is to report the subjective health estimates of postmenopausal women using hormone treatment in a randomised trial.

Methods: A randomised trial in Estonia among healthy postmenopausal women aged 50 to 65 years is being carried out to determine the effects of hormone therapy on women's general health and quality of life. In the blind group, women receive either hormone treatment or placebo; in the non-blind group, they receive either open-label hormone treatment or no drugs. After two years of exposure, the first 1443 women participating in the trial were mailed a questionnaire that asked about their health status in past 12 months. Subjective health rating was asked with a 6-option question (from 'excellent' to 'very poor'). The quality of life was assessed with the help of EuroQoL 5-D questionnaire and a visual analogue scale from 0 to 100. The questionnaire was returned by 66% of women in the non-blind group and by 65% of women in the blind group.

Results: Within the blind group of the trial there was no difference between two arms in the proportions of women rating their health status satisfactory or poor (OR=1.07; 95% CI: 0.79-1.44). In the non-blind group, women taking hormone treatment rated their health status satisfactory or poor less often than women not taking drugs, but the difference was not statistically significant (OR=0.85; 95% CI: 0.65-1.11). According to EuroQoL, women taking hormone treatment in the non-blind group tended to have less problems with mobility than women not taking treatment (OR=0.75; 95% CI: 0.54-1.03). In the blind group, there is no statistical difference between arms in reporting problems with mobility (OR=1.21; 95% CI: 0.81-1.81). There are no significant differences in self-care (blind group OR=1.48; 95% CI: 0.44-4.98; non-blind group OR=0.43; 95% CI: 0.16-1.18), usual activities (blind group OR=1.13; 95% CI 0.77-1.66; non-blind group OR=0.80; 95% CI: 0.58-1.10), pain or discomfort (blind group OR=1.07; 95% CI: 0.90-1.28; non-blind group OR=0.92; 95% CI: 0.78-1.08) and depression (blind group OR=0.99; 95% CI: 0.80-1.22; non-blind group OR=1.10; 95% CI: 0.92-1.32). On 100-point visual scale, the mean health status is 72.3 (95% CI: 70.7-73.9) in the blind group and 71.7 (95% CI: 70.3-73.1) in the non-blind group, there are no differences between the arms.

Conclusions: Postmenopausal hormone treatment does not influence quality of life of women in a blind randomised trial. In a non-blind trial, there was a suggestion of a mild placebo effect in favour of hormone treatment. Health effects measured in non-blind trials may be more relevant to real life.

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KNOWLEDGE AND PERCEPTION OF PRENATAL TESTS TO DETECT FETAL ANOMALIES IN A TRADITIONAL SOCIETY

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Introduction: In the last decades, the Arab-Bedouin community of southern Israel is being increasingly exposed to modern prenatal technologies to detect fetal anomalies. In this community consanguinity is prevalent (58%) resulting in high rates of congenital anomalies and hereditary diseases. The Bedouin community is a Muslim minority with high fertility rates, women's status is low and most women lack formal education. Large gaps in language, religion, socio-cultural values and socio-economic status exist between Bedouin health services consumers and caregivers. A previous study showed utilization of prenatal tests to detect fetal anomalies is low among Bedouin women compared to Jewish women of the same geographical area who have access to similar prenatal services. In order to construct a culturally appropriate intervention program, we conducted a study to assess knowledge and attitudes of Bedouin women towards routine prenatal tests to detect fetal anomalies.

Methods: Semi-structured interviews were conducted in Arabic with 124 Bedouin women visiting MCH clinics in 4 towns during 1999-2000. These women were either visiting for pregnancy or for well-baby follow-up. Interviews were analyzed with qualitative methods.

Results: Fifty five (44%) women had maternal serum test in one of their pregnancies, and 36 (29%) more had heard about the test. However only one woman stated the purpose of the test correctly. Other women stated 'to check whether the fetus is O.K.' (39), gave a wrong answer (14) or said they did not know (28). Most women (77%) stated they had heard about amniocentesis but most of them (69%) did not know what the purpose of the test is. It was perceived by most women (86%) as exceedingly dangerous: it might induce an abortion (51%), harm the fetus (9%) or both (10%). Less than 1/3 of the 33 women referred to amniocentesis underwent the procedure. Fear was the leading reason for refusal. Women thought fluid is extracted from the fetus head (28%) or its vicinity (34%), a misconception which correlates with the local term for amniotic fluid: MAIAT-AL-RAS (water of the head). All women had at least one ultrasound examination. The majority (77%) mentioned fetal scan as the main purpose of the test, 13% mentioned assessment of fetal weight, measures and quantity of amniotic fluid. Only 10% said they did not know why is ultrasound done. A common (56%) misperception was the belief that sonographic scan can detect 'all health problems in the fetus'.

Conclusion: Bedouin women have very little knowledge regarding maternal serum test and amniocentesis and better knowledge of ultrasound examinations. While the risk attributed to amniocentesis is exaggerated the benefit of ultrasound is over-estimated. There is a need to better inform Bedouin women about prenatal tests in order to achieve informed consent/refusal.

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ARE SEX-SPECIFIC DIFFERENCES IN VENOUS DISEASE RISK EXPLAINED BY PREGNANCIES AND INTAKE OF HORMONES?

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Introduction: Chronic venous disorders are among the most common diseases in Germany and especially prevalent in women. However, the last population-based German study was conducted in Tübingen in 1979. To evaluate the prevalence and risk factors of chronic venous diseases in the general population, the German Society of Phlebology initiated this study, supported by the Federal Ministry of Health. Here, we examine whether the higher prevalence of venous disorders previously observed in women are found in our data set and how they relate to pregnancies and intake of hormones.

Methods: Between 11/2000 and 12/2001, 3072 persons, aged 18-79 years were recruited through the registries of residents in Bonn and two rural townships (1,350 men, 1,722 women). The participants answered a standardized questionnaire including questions on pregnancies, menopause and intake of hormones and were examined by clinical means and by duplex-ultrasound. To evaluate the impact of pregnancy and hormones, odds ratios (OR) and 95%-confidence intervals (95%-CI) were calculated via logistic regression for the female study participants, adjusted for age, and region of living. 2 outcome definitions were used: 1) Varicose veins, i.e. clinical classification 3 C2. Those showing isolated spider-bursts exclusively and those without primary etiology were excluded. 2) Chronic venous insufficiency (CVI), i.e. clinical classification 3 C3. To assess the impact of pregnancy on the female-specific risk, the 2 outcome were evaluated for never-pregnant women (n=518) and men.

Results: 713 study participants (23%) had varicose veins (20% of men, 26% of women). 522 study participants (17%) showed CVI as defined above (15% of men, 18% of women). The risk estimate for varicose veins in women was 1.5 compared to men (95%-CI: 1.3-1.8), and 1.3 for CVI (95%-CI: 1.0-1.6). Our data showed a clear dose-response relationship between the number of pregnancies (preg.) and the risk of varicose veins: 1 preg.: OR = 1.4 (95%-CI: 0.9-2.0), 2 preg.: OR = 1.4 (95%-CI: 1.0-2.1), 3 preg.: OR = 1.8 (95%-CI: 1.2-2.6), 4 preg.: OR = 2.1 (95%-CI: 1.3-3.4), 5 or more preg.: OR = 2.6 (95%-CI: 1.6-4.4). This trend was similar for CVI, but risk estimates slightly lower. When analysing the sex specific effect for never-pregnant women and men, the risk for both outcomes was about equal in both sexes. So far, we could not detect a consistent effect of hormone intake (OR=0.8 (95%-CI: 0.6-1.1)) but more detailed data analysis is needed. However, when focussing on women with CVI a moderate risk reduction was seen: OR=0.6 (95%-CI: 0.4-0.8) but needs to be investigated more in depth.

Conclusion: These results support previous findings on the association between pregnancies and varicose veins and seem to indicate that the sex-specific differences in the risk of venous diseases are to a high degree explained by pregnancies.