

# **POSTER PRESENTATIONS**

### Women's rating of expected pain levels at oocyte aspiration

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**Background:** The primary aim was to evaluate women's expectations versus experiences of pain at oocyte aspiration in conjunction with in vitro fertilisation (IVF). Further aims were to investigate if pain was acceptable, if preoperative information was sufficient and which variable(s) influenced women's sense of security.

**Material & methods:** The trial was part of a single-blinded prospective randomised multi-centre study comparing the analgesic effect of lidocain given as preovarian block (POB) or as paracervical block (PCB). The randomisation was on-line central and stratified for variables affecting pain. Women answered a questionnaire concerning different aspects of pain. The Visual Analogue Scale (VAS) was used for pain ratings. Multiple choice questions evaluated satisfaction with the preoperative information and security. Correlation analyses were performed for anxiety. A multiple, stepwise linear regression was used to examine whether any independently variable(s) associated with anxiety.

**Results:** Women in both groups rated expected pain significantly higher than experienced pain ( $P < 0.0001$ ). Significantly more pain was accepted than experienced ( $P < 0.0001$ ). Pain ( $P = < 0.0001$ ) and age ( $P = 0.004$ ) correlated with anxiety. In the regression analyse, expected pain ( $P = < 0.0001$ ) and fear of pain ( $P = < 0.0001$ ) showed association with anxiety. Women were satisfied with the preoperative information and considered staff competence to be of importance for security.

**Conclusions:** Women experienced less pain than they expected and found pain acceptable. If women who were about to start IVF treatment received this information it might them feel less concerned about pain at oocyte aspiration.

## P 2

### A comparison of contraceptive use and the incidence of genital Chlamydia infections and legal abortions in 19-year-old women resident in the city of Göteborg 1991 and 2001

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**Background:** At present there are few studies relating the prevalence of different contraceptive techniques to the occurrence of genital Chlamydia trachomatis infections and legal abortions.

**Objectives:** To compare contraceptive use and the incidence of genital Chlamydia trachomatis infections and legal abortions in 19-year old women resident in the city of Göteborg 1991 and 2001.

**Material and methods:** The use of contraception and possible pregnancies was assessed by a postal questionnaire distributed to random samples of 19-year old women resident in the city of Göteborg in 1991 ( $n = 780$ ) and 2001 ( $n = 666$ ). The number of Chlamydia infections among 19-year old women resident in Göteborg in 1991 and 2001 was obtained from the Dept of Communicable Disease Control.

**Results:** The questionnaire was completed by 641 women (82%) in 1991 and by 514 women in 2001 (77%). The self-reported percentage frequency of non-use of contraception had decreased in 2001 compared with 1991 (38% to 22%). There was a small increase in the use of combined oral contraceptives (35% to 37%), a somewhat greater increase in the use of condom alone (14% to 24%) and a reduction in the use of combined oral contraceptives plus condom (12% to 10%) between 1991 and 2001. During the same period there was a 28% reduction in legal abortions (cumulative incidence  $\leq 19$  years down from 99.8/1000 women in 1991 to 37/1000 women in 2001) and a 29% increase in Chlamydia infections (incidence up from 32.5/1000 women in 1991 to 42.0/1000 women in 2001).

**Conclusions:** There was a favourable trend regarding contraceptive usage and the incidence of legal abortions among 19-year old women between 1991 and 2001. In contrast to these positive findings there was an increase in the incidence of Chlamydia infections during the same time period despite the reported increased use of condoms.

## P 3

### Single embryo transfer minimizes obstetric complications after ovum and embryo donations

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**Background:** Ovum (OD) and embryo (DE) donations are successful treatment options originally offered for women without gonadal function, but used also for women with repeated IVF-failures. However, the high incidence of obstetric complication occur more often than expected in OD/DE pregnancies.

**Methods:** This study included all deliveries ( $n = 92$ ) after OD or DE transfer from 1997 - 2005 in The Family Federation of Finland, Turku Clinic. Data was collected from medical files after the delivery.

**Results:** The mean age of all parturients was 35.8 (21-47) years. A mean of 1.8 embryos had been transferred by a way of 75 fresh and 17 frozen embryo transfers. The proportion of elective single embryo transfer (eSET) of all OD transfers increased from 7% to 48% during the study period. 75 out of 92 (81.5%) women had singleton delivery and 17 out of 92 (18.5%) had twins. In the singleton group, the incidence of a hypertensive disorders was 15.2%. The rate of preterm delivery ( $< 37$  weeks) was 7.4% and Caesarean section 33.3%. Of the infants 2.9% had birth weight  $< 2.5$  kg. In the twin group, the incidence of a hypertensive disorders was 58.8%. The rate of preterm delivery was 58.8% and Caesarean section 82.4%. Of the infants 52.9% had birth weight  $< 2.5$  kg.

**Conclusions:** The majority of recipients with singleton gravidity exhibited a favourable normal term pregnancy, but the rate of Caesarean section was higher than expected. The indications of operative delivery were variable. A long infertility history may increase delivery fear and influence to high Caesarean section rate at certain level. Twin

pregnancies were associated to a very high risk of perinatal complications. To minimize obstetric complications after OD and DE treatments, the singleton delivery should be the main target. However, patients after long unsuccessful infertility treatments are not always motivated to this, and should therefore have a proper counselling about the obstetric risks.

#### P 4

##### Genetic factors determining innate immunity and the risk of tubal infertility

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**Introduction:** Tubal factor infertility is mainly caused by obliteration of the fallopian tubes commonly caused by a past salpingitis, particularly due to infections with Chlamydia trachomatis (Ct). Mannose-binding lectin (MBL), surfactant protein D (SP-D) and toll-like receptor 4 (TLR4) are important components of the innate immune system. Polymorphisms in genes encoding for MBL, SP-D and TLR4 have been associated with infectious and inflammatory diseases. Thus, we speculated whether the presence of MBL, SP-D or TLR4 polymorphisms could be related to tubal infertility and risk of seropositivity for Ct.

**Material & Methods:** 107 women with tubal infertility referred to IVF treatment and 113 women with no history of tubal disease referred to ICSI or IVF with donor semen due to male factor infertility were prospectively included. MBL, SP-D and TLR4 polymorphisms were investigated PCR techniques. Seropositivity for Ct was evaluated by ELISA and western blot techniques.

**Results:** A significant association between Ct seropositivity and tubal infertility compared with ICSI controls (odds ratio 5.72,  $P < 0.0001$ ) was observed. The likelihood to achieve a living pregnancy at week 7 was the same between Ct seropositive and Ct seronegative women. No significant difference in MBL, SP-D or TLR4 genotypes between the women with and without tubal disease was observed even when the Ct seropositivity status was taken into consideration. The investigated genotypes did not influence the likelihood to achieve a living pregnancy at week 7 in either group.

**Conclusions:** Polymorphisms in the investigated genes were not associated with tubal infertility or decreased IVF outcome nor were they associated with Ct seropositivity. Thus, polymorphisms in these innate immunity genes do not seem to play a direct role in the pathophysiology of tubal obliteration. In our study, Ct seropositivity was not associated with the likelihood to achieve a living pregnancy.

#### P 5

##### Lymphocyte phenotyping in pregnant women with vulvovaginal candidosis

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**Background:** Vaginal candidosis (VVC) represent a major health problem to women of childbearing age. The fetus was compared to an allograft because paternal antigens are also expressed. In pregnancy, the impairment of immunity and increasing of steroid hormones concentration predisposed to mucous membrane candidosis, especially VVC.

**Objectives:** To evaluate by quantitative and qualitative point of view the cell mediated immune response in pregnant women with clinical signs of VVC through lymphocyte phenotyping. We tried to emphasize if exist any correlations between lymphocyte populations' level or T cells function and VVC in pregnancy.

**Methods:** We performed our investigation using a lot consisting of 30 pregnant women with clinical signs of VVC hospitalized in Obstetrics-Gynecology Clinic, Iasi (Romania). Lymphocyte count was measured by flow cytometry and diagnostic of VVC was confirmed by microbiological investigations. Peripheral blood mononuclear cells (PBMC) from these patients were stimulated with phytohemagglutinin (PHA) in order to evaluate the activation of CD4+ and CD8+ T lymphocytes. All data were analyzed statistically by SPSS 10.

**Results:** In women with VVC no increase of T lymphocyte number was observed ( $p=0.2325$ ) the CD4+/CD8+ T lymphocytes ratio exhibits regular values. The correlation between low values of proliferation index of PBMC stimulated with PHA and the clinical signs of VVC was statistical significant ( $p < 0.05$ ) showing an impairment in T cells function.

**Conclusions:** These findings demonstrated that only qualitative disorders of cell mediated immune response involved VVC in pregnancy.

#### P 6

##### Lithuanian obstetricians - gynaecologists' general attitude to elective caesarean section on maternal request

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**Objective:** To assess Lithuanian obstetricians - gynaecologists' general attitude towards elective caesarean section on maternal request in an uncomplicated single cephalic pregnancies at term.

**Methods:** Anonymous structured questionnaires were distributed to the participants of the VII National Congress of the Lithuanian Society of Obstetrics & Gynaecology held in September 2005. Respondents were asked about advantages of different modes of delivery, their attitude towards women's right to choose caesarean delivery and their agreement to perform operation with no indication.

**Results:** Of a 200 questionnaires, 105 were completed (52.5 % response rate). Indicating advantages of different modes of delivery, the most respondents noted that vaginal delivery is natural (87.6 %), whereas elective caesarean section permit to plan daytime delivery and is convenient (59.9 %). Sixty respondents (57.1 %) said that women should be allowed to choose mode of delivery, 55 (52.4 %) think that indication "maternal request" should be legalized and 37 (35.2 %) would agree to perform such operation with no medical indication. There was significant difference between male and female obstetricians - gynaecologists with respect to agreement to perform caesarean section on demand, 62.5 % and 27.2 % respectively (P = 0.003).

**Conclusion:** The vast majority of respondents believe that vaginal delivery is natural. However more than half of them support women's autonomy to choose caesarean section and think that indication "maternal request" should be legalized, despite the fact that not everyone was willing to perform such operation.

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## P 7

### **Deinfibulation, an easy polyclinic opening-operation of a closed vagina, can help women who have been exposed to the most serious form of female genital mutilation (FGM)**

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**Background:** Female genital mutilation (FGM) is one of the world's greatest health problems concerning the health of women and girls. Approximately 130-150 million females are mutilated according to the World Health Organisation (WHO). The majority of the women come from Africa where the tradition has been practised for over 2000 years. No religion prescribes that girls and women should be mutilated in the genital tract. There are four main types of FGM but the variations are many within each group. The most serious form of FGM is the infibulation a form practised in Somalia and Sudan. In these states almost 99% of the female population lack the clitoris, labia minora and parts of labia majora and their vulvas have been stitched together leaving only a mm-wide opening to let urine and menstrual blood pass. FGM can cause recurrent urinary tract infection, painful sexual intercourse and menstruation, and difficulties with childbirth. In Sweden there are 17000 somalian women. Deinfibulation, the operation which opens the vulva can easily be done as a polyclinic operation with no other personal involved than the doctor and an assisting nurse at minimal time consumption and at a small cost. The girl/woman applies EMLA-cream at home. Local anaesthetics are infiltrated in the skin fold covering the vagina after which it can be cut apart. The mucous membrane of the vagina is sutured to the skin. Since the women don't have any protective labiae the urethra should be covered by skin to avoid infections and discomfort (see photos). It is important to inform the woman to avoid heavy cleaning of the vulva after the deinfibulation to avoid candida-infection. As health care professionals we should give high priority to the deinfibulation operation but only on the woman's own demand. We can thereby prevent further suffering for the woman especially when it is time for her first coitus.

## P 8

### **'A good birth experience'**

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**Background:** With the rising number of C-Sections, the use of epidurals and patients' participation in decision making, there is a belief among obstetricians and midwives that the 'birth culture' has changed over the past few decades.

**Objective:** To focus on what first-time parents experience as 'a good child birth', A Danish national research project was carried out in 2004.

**Methods:** Two anthropologists carried out the qualitative research project in four different hospitals with the participation of 43 couples expecting their first child and a large number of obstetricians, midwives and other relevant personnel. The qualitative approach consisted of in-depth interviews with the couples before and after the birth of their child, observation studies of the actual birth, and in-depth interviews with the staff participating in the child birth.

**Results:** A narrative approach showed that women and men long for a continuous birth experience. The prerequisite of this is an interaction between the future parents and the hospital personnel based on trust, negotiation, and readiness to both meet the couple's wishes and/or to explain to them why the birth turns out to be different than expected. Furthermore, it is essential that the experiences before, during and after the birth are coherent, although not necessarily identical.

**Conclusion:** This study has, by approaching the practice and intentions of future parents and staff at maternity wards as having a narrative course, provided a tool for understanding the pregnant woman and her partner and thereby optimising the birth experience and avoiding traumatic deliveries.

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## P 9

### **Review: Informed consent: providing information about prenatal examinations**

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**Background:** Prenatal care has gradually moved away from paternalism, to a state where patient autonomy and information is vital. It is known from other health care settings that the way information is presented affects understanding.

**Objective and hypothesis:** The objective is to summarize current knowledge on aspects of informing pregnant women about prenatal examinations. Women's knowledge, decisional conflict, satisfaction and anxiety will be explored as compared with different ways and different groups of health professionals providing information. To what extent information empowers informed decision making will be explored as well.

**Methods:** The review is based on systematic search strategy in the electronic databases Medline and Science Citation. Additional studies were identified through reference lists of individual papers obtained.

**Results:** Improving knowledge scores and reducing decisional conflict can be obtained by group counselling, individual sessions and by way of written materials. None of the interventions leads to a raise in anxiety scores or influence up-take rates. Satisfaction with information provided is found unrelated to level of knowledge, but associated with having expectations for information met. Information does not seem to empower women making an informed consent. Information on Down syndrome is often confined and limitations of screenings tests rarely mentioned. Understanding is better achieved by presenting the risk estimate as a numerical probability compared to a verbal explanation. Rates are better understood than proportions. Using medical words or lay terms can significantly alter risk perception.

**Conclusions:** The way information is presented affects understanding. Information can increase knowledge level and reduce decisional conflict, without raising anxiety scores. A clarification of the women's expectations seems paramount.

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## P 10

### Birth asphyxia and hypoxic ischemic encephalopathy: incidence and obstetric risk factors

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**Background:** Fetal surveillance during labor has changed little since fetal heart rate monitoring (FHR) became standard practice. Neonates still suffer birth asphyxia, if severe enough they get hypoxic ischemic encephalopathy (HIE) with permanent neurological damage or death. The study objects were to assess incidence and obstetric risk factors for severe asphyxia.

**Methods:** Among 13495 live term infants born at LUH from 1.1.1997- 31.12.2001 there were 127 with the ICD diagnosis birth asphyxia, defined as 5 minute Apgar score  $\leq 6$  and 19 who suffered HIE. Clinical information was collected on pregnancy related problems, smoking, FHR-analysis, amniotic fluid color, delivery mode, Apgar score and scalp pH.

**Results:** The incidence of asphyxia was 9.4/1000 and of HIE 1.4/1000. Among these neonates maternal disease during pregnancy was uncommon and did not predict the severity of asphyxia. Meconium stained amniotic fluid (MSAF) and nuchal cord was seen in 50% of cases. Abnormal FHR was observed in 66% of neonates with asphyxia and 79% of HIE cases. In 6,3% of cases FHR-tracings could not be analysed. Operative delivery was significantly more common in the study cohort compared to other deliveries at LUH; ventouse  $p < 0,001$ , forceps  $p < 0,001$ , emergency cesarean section  $p \leq 0,008$ . No neonate with asphyxia was born by elective cesarean section.

**Conclusion:** The incidence of birth asphyxia was high compared to other studies. Non-reassuring FHR was a common antecedent to intervention. Despite efforts to detect intrapartum asphyxia some fetuses do not show signs of distress, even among those who develop HIE after asphyxia. High percentage of FHR-tracings were indeterminate because of inadequate tracings. Nuchal cord is a risk factor for asphyxia and so is MSAF but other risk factors could not be deter-

mined in this study. Current methods to detect intrapartum asphyxia are limited with need for improvement.

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## P 11

### Social- demographic- and psychological characteristics of first time mothers fearing childbirth

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**Background:** An increasing number of women wish to deliver by caesarean section without medical indication. We presume that the request of caesarean section without medical indication, rely on fear of childbirth. The aim of this study is to identify determinants of first time mothers fearing childbirth. The studies that have investigated characteristics of women fearing childbirth, observed that women with psychological problems are at an increased risk for fear of childbirth. Other risk factors may be low age, less education, being unemployed, having a sparse network and dissatisfaction with partnership. Because of the increasing number of women requesting caesarean section, we hypothesized that fear of childbirth is increasing. One may speculate if the well educated women, living an urban life, planning her first pregnancy in a high age, more often may fear the unknown nature of birth.

**Methods:** We established a cohort of 40.000 first time mothers, who were a part of The Danish National Birth Cohort. Data collection took place from 1997 to 2003 and comprised a total of 100.000 women of all parities. For this study data was obtained by telephone interviews in early and late pregnancy and linked to data from the Danish Hospital Discharge Register and the Danish Medical Birth Register.

**Results:** In the cohort fear of childbirth was present in 8,15% of the women in early pregnancy and in 7,42% in late pregnancy. 4,2% of the women changed from no fear to fear, and 4,2% changed from fear to no fear. There will be done further analyses with adjustment for several social- demographic- psychological- lifestyle- variables and fertility history and fitted into a logistic regression model, with fear of childbirth as the outcome. The analysis will include a time trend in childbirth fear.

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## P 12

### Review: Informed consent: - Attitudes, knowledge and information, concerning prenatal examinations

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**Background:** Prenatal screening has become an ever increasing part of antenatal care in the western part of the world. Providing women with information enabling an informed consent to prenatal examinations has been widely recommended, with women accepting or declining the screening tests offered in full understanding of pros and contra.



**Objective and hypothesis:** To summarize current knowledge of women's expectations and attitudes concerning prenatal examinations as well as the amount of knowledge possessed by pregnant women undergoing prenatal examinations. Reasons for accepting or declining a screening test offered, as well as the influence of information in the decision-making process is also explored.

**Methods:** The review is based on systematic search strategy in the electronic databases Medline and Science Citation. Additional studies were identified through reference lists of individual papers obtained.

**Results:** Women in general express a positive attitude towards screening procedures in pregnancy. Women are found most knowledgeable about procedural and practical aspects but are not always aware of the purposes or any limitations of the tests offered. Understanding and interpretation of risk estimates is low and possible consequences if the test reveals a problem is seldom considered beforehand. A woman's attitude to prenatal examinations is found decisive for up-take of prenatal tests, with no association between a woman's attitude towards prenatal examinations and her knowledge of those tests. Most women consider their doctor an important source of information, and state that information has influenced their decision.

**Conclusions:** Pregnant women favor prenatal examinations, but participation does not seem to be based on an informed consent.

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## P 13

### Information and acceptance of prenatal examinations - a qualitative study

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**Background:** In 2004 The Danish National Board of Health issued new guidelines on prenatal examinations. The importance of informed decision making is strongly emphasised and any acceptance of the screenings tests offered should be based on thorough and adequate information.

**Objective and hypothesis:** To explore the influence of information in the decision-making process of prenatal screenings tests offered, the association between information, knowledge and up-take rates and reasons for accepting or declining the screenings tests offered.

**Methods:** The study is based on a qualitative approach using a semi-structured interview guide and includes 26 pregnant women each interviewed shortly after having received information at their general practitioner, and again after having completed prenatal screenings tests.

**Results:** Only very few of the pregnant women in this study remember having received any information of the limitations of the screenings tests offered. The level of knowledge is found to be low among the women. Prenatal examinations are mostly accepted as a reassurance even though the pregnant women generally believe their child to be sound and healthy. Providing the women with information

and offering prenatal screenings tests does not alter this or make the women feel at risk. Information provided is found to be of only minor importance in the decision-making process. Predominating is the expectation of ultrasound examinations as a positive experience that is legitimated by the health care system offering it. By prenatal examinations the pregnant women want to be giving the choice of future management should there be something wrong with their child.

**Conclusions:** Participation in prenatal examinations is not based on a thorough knowledge of pros and contra of the screening tests offered, but accepted as a reassurance without full understanding of the consequences of participation.

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## P 14

### Clinical experience with CTG and ST analysis of the fetal electrocardiogram: Delivery mode and neonatal outcome

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**Background:** Intrapartum surveillance with CTG and ST analysis of the fetal CTG reduced the frequency of cord metabolic acidosis at birth and operative delivery for fetal distress in two randomized controlled trials.

**Objective:** All deliveries  $\geq 36$  weeks of gestation (N=4693).

**Hypotheses:** Intrapartum surveillance with CTG and ST analysis should lower the frequency of cord artery metabolic acidosis at birth.

**Methods:** Data was retrieved from maternal medical records and from The Medical Birth Registry of Norway. A total of 950 deliveries were monitored with CTG and ST analysis.

**Results:** 950 deliveries (20%) were selected to monitoring with CTG and ST analysis (CTG+ST group), 3743 deliveries (80%) had monitoring with CTG or intermittent auscultation (CTG group). A total of 751 (16%) had an operative delivery, of these 385 were in the CTG+ST group. 90 (9,5%) newborns in the CTG+ST group were transferred to the neonatal intensive care unit compared to 120 (3,8 %) newborns in the CTG group. In the CTG+ST group there were 24 neonates (2,5%) with 5 min Apgar score < 7, compared to 26 newborns (0,7%) in the CTG group. Acid base data from the umbilical artery was available in 722 (76 %) cases in the CTG+ST group. There were 7 (1%) cases of metabolic acidosis at birth, defined as pH<7,05 and base deficit > 12 mmol/l. There were no cases of perinatal death in the CTG and ST group.

**Conclusion:** The frequency of metabolic acidosis at birth was low in spite of short clinical experience, there was however a high frequency of operative deliveries in the CTG and ST group.

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## P 15

### Maternal death in a migration perspective - using snowball sampling to explore cases

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**Background:** Maternal mortality is one of the best parameters to measure quality of care. However, the many methods to study it reflect the difficulty to assess the problem and underreporting may ex-

ist. In the 90'ies, the classification has been expanded (ICD-10) to include deaths up to one year from termination of pregnancy (late) and death from any cause during the puerperium (pregnancy-related). In Sweden, the maternal mortality is 2/100,000 live births. Black women in Europe have been shown to have a higher risk regarding maternal death compared to white women. The aim was to localize probable cases of maternal death among black immigrants in Sweden and compare to vital statistics.

**Methods:** A social scientific method; snowball sampling where conducted by three locators among Swedish East Africans. Verbal autopsies were performed with relatives in order to verify maternal deaths. The explored cases reported by the relatives were then compared with local and national statistics.

**Results:** The Somali locator localized 18 cases, resulting in exploration of 11 cases but 4 could not be confirmed due to lack of information. Seven cases were considered probable maternal deaths. In 4 cases, verbal autopsies were performed with relatives. These deaths were classified as 2 direct and 1 indirect < 42 days and 1 late maternal deaths. However, none of these 4 cases were found to be classified as maternal deaths when comparing data from the Death Register. The Ethiopian and the Eritrean locators did not localize any cases.

**Conclusions:** Snowball sampling was of great value in contacting immigrants and might be a new way of exploring unusual and sensitive medical phenomena. The number of probable misclassified maternal death seemed to be significant and should be taken in consideration when discussing quality of obstetric care. One reason for underreporting might be unawareness of maternal death classification among Swedish physicians.

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## P 16

### Women with overweight have more complicated pregnancies and deliveries compared to women with normal weight

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**Background:** On the background of the increasing prevalence of overweight we wanted to describe and to evaluate the pregnancies and the deliveries among pregnant women with overweight.

**Methods:** A prospective study of 734 pregnant women during 1½ year. We used the Body-Mass-Index (BMI) before their pregnancy. The referred women were divided into 2 groups; 367 women with BMI>25 were compared to 367 controls with BMI<25. Both groups were stratified with correlation to their life style and obstetrics anamnesis.

**Results:** Our study didn't show any difference in their life style, smoking habits or obstetric anamnesis. At delivery the age of gestation was 39,3 and 39,6 weeks for both groups without any difference. The way of deliveries was different in the two groups. Vaginal delivery: 91% in the control group against 79% in the overweight. Total rate of caesarean section: 9% in the control group against 21% in the overweight, (p<0,05). Among women with overweight the rate of acute caesarean section was twice the rate among the controls. The rate of induced deliveries was 10% for the overweight against 3% for the controls, (p<0,05).

**Conclusion:** Overweight among pregnant women gives many complications at the time of delivery. It is necessary with campaigns to reduce overweight and fatness in women and men as well.

## P 17

### Validity of preeclampsia related-diagnoses recorded in a national hospitalization registry and in a postpartum interview of the woman

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**Background:** The validity of the preeclampsia diagnoses has only briefly been investigated.

**Objective:** Our aim was to describe the preeclampsia diagnoses available from two large Danish sources.

**Methods:** In a population-based sample, we examined the validity of preeclampsia and related diagnoses recorded in a mandatory national hospital discharge registry and in a standardized telephone interview of women (6 months after delivery). We reviewed hospital charts of 3039 women using a gold standard for preeclampsia, defined in accordance with the guidelines from the American College of Obstetricians and Gynecologists.

**Results:** The incidences of preeclampsia of all types were 2.7%, 3.4% and 2.9% according to the registry, the interview and the gold standard, respectively. The registry had a specificity of 100% for the serious subtypes and 99.3% for all types of preeclampsia, whereas the sensitivities were 43.6% and 69.3% and the positive predictive values 100% and 74.4%, respectively. A simple question to the woman whether she had had preeclampsia had a sensitivity of 72.6%, a specificity of 98.6% and a positive predictive value of 59.2%, which changed to 27.4%, 99.7% and 70.8%, respectively, in case the mother furthermore responds positively on a question regarding use of antihypertensive medication.

**Conclusions:** Combining registry and interview information could further increase specificity at the expense of sensitivity. Furthermore, we conclude, for the purpose of etiologic studies, the registry had acceptable validity, whereas the usefulness of self-reported information may be limited.

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## P 18

### Maternal and Fetal Deaths Related to Motor Vehicle Crashes: A Swedish National Population-based Register Study

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**Context:** This first-ever assessment of the frequency and outcome of pregnant women and fetuses involved in motor vehicle crashes (MVCs) in Sweden indicates that crashes are a significant cause of maternal and fetal death.

**Objective:** To determine the rate of involvement, death and injury among pregnant women and their fetuses involved in MVCs in Sweden.

**Design and Setting:** Retrospective national population-based descriptive study of data obtained by linking Sweden's medical birth register, road accident and autopsy registers for the years 1991 - 2001.

**Main Outcome Measure:** Maternal and fetal deaths rates and maternal injury rates and the rate of involvement of pregnant women in MVCs

**Results:** The incidence of MVCs among pregnant women during the study period was 207/100 000 live births. MVCs in Sweden caused 1.4 maternal and 3.7 - 8.7 fetal deaths per 100 000 live births during the study period. The most common obstetrical injuries among the MVC-related maternal death cases were placental abruption (at least 33% of cases) and uterine rupture (27% of cases). Pregnant women involved in a MVC, were at an increased risk of having an intrauterine fetal death (Odds Ratio, 3.52 [95% CI 2.41-5.16],  $p < 0.0001$ ). There was no significant difference between the frequency of fatal, major or minor injuries among pregnant women compared to non-pregnant women involved in MVCs during the study period.

**Conclusions:** These results have shown that MVCs were responsible for almost one third of all maternal deaths and caused at least four times as many fetal deaths as infant deaths. Documentation of pregnancies in road accident and medical registers and subsequent data investigations are imperative for a more complete understanding of the influence of MVCs on pregnancy outcome.

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## P 19

### Cumulative incidence of previous spontaneous abortion in Sweden 1983-2003: A register study

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**Background, Objective:** Many women experience miscarriage every years. The aim of this study is to find out how common miscarriages are among women who have delivered a child.

**Methods:** The numbers of deliveries and miscarriages were extracted from the Swedish Medical Birth Register (MBR) between 1983 and 2003. Linear regression was performed in order to investigate whether the increasing mean age of mothers, or whether differences in pregnancy identification methods could explain the increased frequency of miscarriage.

**Results:** The reported number of miscarriages increased each year during the twenty-one year period, with a marked increase between 1991 and 1993 and only a slight increase during the final 10 years. For primiparous women, the frequency of reported miscarriages per delivery increased from 8.6% in 1983 to 13.9% in 2003. The corresponding figures for 2-parous women showed an increase from 14.5% to 21.3% respectively. Women aged 30-34 years had an odds ratio of 1.43 (95% CI 1.40-1.45) to suffer spontaneous abortion compared to age group 25-29 years. Linear regression showed that an increase in mean age at delivery could only partly explain the increase in the frequency of reported miscarriages. A possible explanation could be differences in methods of identifying early pregnancy.

**Conclusions:** Of all women who deliver a child, nearly 25% have experienced previous miscarriage. The increased mean age of women could only explain a small portion of the seen increase in miscarriage. The marked increase 1991-1993 is interesting.

## P 20

### Maternal second-trimester serum alpha-fetoprotein as a risk factor for placental abruption

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**Background:** To study second-trimester maternal serum alpha-fetoprotein (MSAFP) and free beta human chorionic gonadotrophin (MSβ-hCG) as markers for the prediction of placental abruption.

**Methods:** Fiftyseven women with placental abruption and 108 control women without placental abruption were tested for second-trimester MSAFP and MSβ-hCG levels as a part of trisomy 21 screening program. The medians of MSAFP and MSβ-hCG multiples of median (MoM) were analysed and suitable cutoff levels for MSAFP were searched for. Multivariate logistic regression analysis was used to identify independent risk factors.

**Results:** The median of the MSAFP MoM was significantly higher in the abruption group than in the controls ( $p = 0.004$ ). In the multivariate analysis, the independent risk factors for placental abruption were MSAFP > 1.5 MoM (adjusted OR 3.9; 95% CI 1.6, 9.7), smoking (OR 3.7; 95% CI 1.7, 7.9) and bleeding in II or III trimester (OR 4.9; 95% CI 1.6, 15.0). In the abruption group, 44% had preterm labor (OR 13.3; 95% CI 5.0, 35.2), and 30% of the newborns were small for gestational age (OR 11.1; 95% CI 3.5, 34.8). The median of the MSβ-hCG MoM did not differ between the cases and controls.

**Conclusions:** Second-trimester MSAFP levels were significantly higher in women who developed placental abruption whereas MSβ-hCG levels were not. MSAFP > 1.5 MoM was an independent marker for placental abruption. However, this cutoff level is not sensitive enough to be used as a predictor in population based screening programs.

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## P 21

### Maternal, not the fetal, factor V Leiden mutation is associated with severe pregnancy complications

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**Background:** There is solid evidence that severe pregnancy complications (severe pre-eclampsia, placental abruption and fetal death) are associated with the factor V Leiden mutation (FVL). Our aim was to study the role of the maternal and fetal FVL-mutation (inherited from the mother or from the father), in the development of severe pregnancy complications, and whether the complications are worse if both mother and fetus have the FVL-mutation.

**Methods:** The study group comprised 126 mothers and their 74 fetuses (unfortunately we did not have umbilical blood samples from all fetuses). The control group comprised 111 mothers and their 50 fetuses. We compared the prevalences of FVL-mutations between the study and control groups.

**Results:** In the study group 12 mothers and 3 fetuses had the FVL-



mutation and also one fetus had the FVL-mutation (inherited from the father, while the mother had the normal FVL-gene). In the subgroup (maternal and fetal FVL-mutations) the complications and outcomes of the pregnancies did not differ from the rest of study group. The outcome of the case where the fetus only had the FVL-mutation is also not different from that in the study group. In the control group 2 mothers had the FVL-mutation, but all fetuses had the normal FVL-gene. Besides that, 3 fetuses had the FVL-mutation (but the mother's genes were normal). In all cases the pregnancy outcome was normal.

**Conclusions:** The maternal FV mutation, not the fetal one, seems to be associated with severe pregnancy complications.

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## P 22

### Safety and efficiency of treatment with Low Molecular Weight Heparin during pregnancy

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**Background:** Venous thromboembolism is the main cause of maternal death during pregnancy and the postpartum period in the developed world. Effective and safe therapy to those at risk remains important.

**Objective:** We aimed to evaluate the use of LMWH for prophylaxis and treatment of thromboembolic complications in pregnancy.

**Methods:** We retrospectively reviewed case reports of 160 consecutive pregnant women treated with individually dosed LMWH and giving birth at a Danish county hospital in the period 2001-2005. Indication for treatment with LMWH, doses, obstetrical outcome as well as complications and interventions during pregnancy and the postpartum period were registered.

**Results:** Treatment was initialised because of thrombophilia (81%), prior or current thromboembolic event (18%) or adverse obstetrical outcome (one woman). Most women were treated with Tinzaparin, whereas 5 received Dalteparin. Treatment was commenced in the 5th-39th gestational week and was continued (24 hour pause at delivery) until 6 weeks after delivery although discontinued at delivery if initiated due to prior adverse obstetrical outcome. None had thromboembolic events throughout the period of treatment. Twelve women had increased bleeding after delivery, the majority due to uterine atonia. There were no incidences of wound haematoma and no evidence of osteoporotic fractures or heparin induced thrombocytopenia. Two women experienced third trimester foetus mortuus, 2 women had first trimester miscarriages, and two women had first trimester induced abortions. The remaining pregnancies resulted in 150 healthy babies.

**Conclusions:** Individually dosed LMH is a safe and effective treatment and prophylaxis of thromboembolic complications during pregnancy and the postpartum period.

## P 23

### Early versus delayed augmentation by oxytocin in nulliparous women with prolonged labour

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**Background:** Oxytocin augmentation shortens labour but also increases pain and discomfort during delivery. Randomised controlled studies are needed to evaluate the obstetrical outcome together with the women's experiences of active versus expectant management of labour.

**Objective:** To study the effects of oxytocin treatment versus delayed oxytocin treatment on the obstetrical and neonatal outcome of spontaneous but prolonged labour in nulliparous women.

**Methods:** Healthy nulliparous women with normal pregnancies and spontaneous labour were included after consent. Amniotomy was performed if labour was prolonged during the active phase with no further opening of the cervix or descent of the head for 2 hours. 562 women with slow progress were randomly allocated to either augmentation by oxytocin infusion (standard care group = SG) or to expectancy (expectant care group = EG) with observation during another 3 hours. If the women in the EG still did not progress in labour, a reassessment concerning the need for oxytocin augmentation was done. A questionnaire regarding the experience of labour was sent to the women one month post partum.

**Results:** Early oxytocin infusion resulted in an increase in given amount of oxytocin and in a mean decrease of 125 minutes of the interval from randomization to delivery. No differences in delivery mode or number of babies with Apgar scores below 7 at 5 minutes were seen.

**Conclusions:** When slow progress was diagnosed in the active phase of labour early augmentation with oxytocin gave no obstetrical benefits except a shorter allocation-to-delivery interval. The women's experiences from the delivery will be evaluated.

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## P 24

### Is leisure time physical activity in early pregnancy associated with preterm delivery?

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**Background:** Although it is generally recommended that pregnant women should be moderately physically active, the association between leisure time physical activity and preterm delivery has not been thoroughly investigated.

**Objective:** To examine the association between different levels of leisure time physical activity and the risk of preterm delivery.

**Methods:** All pregnant women attending routine antenatal care at The Department of Obstetrics, Aarhus University Hospital, Denmark were invited to participate in the study. The population was 5,749 healthy women with singleton pregnancies. The woman was asked to indicate which of the following four categories that described her level of leisure time activity: mostly sitting (reading, watching television, going to the cinema); engaged in light physical activity (more than 3 hours per week of light gardening, table tennis); sports

or heavy gardening more than 3 hours per week (running, swimming, tennis, badminton) or competitive sport several times per week. The two categories with highest activity were analysed together. The three groups are referred to as sedentary, light activity, and moderate to heavy activity, respectively. Deliveries took place 1989-1991.

**Results:** The preterm delivery rate was 3.7%. Pregnant women with light or moderate to heavy activity had a statistically significant reduced risk for preterm delivery compared to sedentary pregnant women: (OR, 0.75; 95% CI, 0.56 - 0.996), (OR; 0.33; 95% CI, 0.13 - 0.81).

**Conclusions:** Leisure time physical activity during the first and early second trimester of pregnancy seems to decrease the risk of preterm delivery.

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## P 25

### A comparison of sublingual and vaginal misoprostol for induction of labour: a randomized controlled trial

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**Objective:** To compare the efficacy and safety of 50 µg of sublingual misoprostol with 25 µg of vaginal misoprostol administered for labour induction at term.

**Methods:** Double-blinded randomised controlled trial. A total of 140 women were randomised to receive either 50 µg of sublingual misoprostol with vaginal placebo (n = 70) or sublingual placebo with 25 µg of vaginal misoprostol (n = 70) every 4 hours (maximum 6 doses). The primary outcome measure was the interval from the start of induction to vaginal delivery. The number of misoprostol doses given, the need for oxytocin augmentation, excessive uterine activity, mode of delivery and neonatal outcomes were other outcome measures.

**Results:** The induction to vaginal delivery time was significantly shorter (902.9 ± 224.4 vs 999.3 ± 246.4 min, p = 0.03) and significantly more women were delivered vaginally after single dose of misoprostol (53.4% vs 25.0%, p = 0.002) in the sublingual group compared with the vaginal group. The incidence of tachysystole was more than 3-fold higher in the sublingual group than in the vaginal group (14.7% vs 4.3%, p = 0.04). There were no significant differences in the incidence of hypertonus or hyperstimulation syndrome, oxytocin augmentation, mode of delivery or neonatal outcomes between the two groups.

**Conclusions:** Fifty micrograms of sublingual misoprostol four hourly seems to have better efficacy than 25 µg of vaginal misoprostol and could thus be an option for labour induction at term. Despite more frequent tachysystole with 50 µg of sublingual misoprostol, neonatal outcomes were similar.

## P 26

### Fetal ECG for intrapartum monitoring; experience from a first year of use

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**Background:** Available evidence suggests that ST waveform analysis of fetal ECG (STAN®) in addition to CTG has the potential to give significant benefits in reducing operative deliveries for foetal distress and reducing the incidence of metabolic acidosis at birth. For this reason the STAN method was introduced on full scale at the Department of Obstetrics, Rigshospitalet, University of Copenhagen, Denmark, exchanging all cardiotocography (CTG) monitors in the labour ward along with education of the personnel.

**Objective:** To describe the experience during the first year of ST-analysis (STAN) in Department of Obstetrics, Rigshospitalet, University of Copenhagen, Denmark.

**Method:** Interventional study with a historic control regarding use of scalp sampling, delivery mode and neonatal outcome, in deliveries with gestational age more than 36 weeks using STAN (S31) and fetal blood sampling for intrapartum monitoring (October 2004- September 2005) compared to CTG and fetal blood sampling (October 2003-September 2004).

**Results:** From October 2004, when STAN was introduced, 3145 women were delivered with a gestational age > 36 weeks, 401 were subjected to intrapartum fetal monitoring with ST-analysis of the fetal ECG in addition to CTG. They were compared to the 3047 women delivered the year before monitored with CTG. The incidence of umbilical cord pH < 7.05 was reduced with 37 % (n=55 vs 36). Fetal blood sampling was reduced with 27% and emergency caesarean sections with 10%. There was no difference in instrumental vaginal deliveries in the two periods.

**Conclusions:** Based on our first year experience with STAN, we have seen a reduction of low umbilical cords pH, use of scalp-pH and emergency caesarean section during labour.

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## P 27

### Monitoring with cardiotocography and ST analysis of the fetal electrocardiogram in vaginal breech deliveries - one years experience

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**Background:** A favourable neonatal outcome in vaginal breech delivery might depend on intrapartum fetal monitoring with either cardiotocography (CTG) or analysis of the fetal electrocardiogram (CTG+ST).

**Objective:** All singleton breech deliveries from 36 weeks of gestation selected for vaginal breech delivery. Planned caesarean section in breech presentation was excluded.

**Hypotheses:** Intrapartum monitoring with CTG+ST of fetuses in breech presentation selected for vaginal delivery might reduce the risk of adverse outcome.

**Methods:** Retrospective study with data retrieved from medical records of 149 breech deliveries selected for vaginal delivery.

**Results:** The number of women monitored with CTG+ST was 65 and

27 were monitored with CTG. 72% in the CTG+ST group had a vaginal breech delivery compared to 70% in the CTG monitored group. Apgar score at 5 minutes less than 7 was found in 6% in the CTG+ST group and in 4 % in the CTG group (NS). There was one infant with metabolic acidosis at birth in the CTG+ST group, defined by a cord artery pH<7,05 and BD>12mmol/l and zero in the CTG group (NS). In the CTG+ST group 6% of the newborn were referred to the neonatal care unit compared to 7 % in the CTG group (NS). No infants died or had a diagnosis of encephalopathy.

**Conclusion:** There were no cases of perinatal mortality or serious morbidity in the breech presentation group. Monitoring with CTG and ST analysis in breech deliveries might be useful. However, more studies are necessary to reveal the advantages of the method in breech presentation.

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## P 28

### Mineral water fortified with folic acid and vitamins B6, B12, D and calcium improves folate status and decreases plasma homocysteine concentration in pregnant women

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**Objective:** There is no mandatory food folic acid fortification in Finland. We investigated the effects of mineral water fortified with folic acid, vitamins B6, B12, D and calcium on serum and erythrocyte folate concentrations, serum vitamin B12 and plasma homocysteine concentrations in early pregnancy.

**Methods:** We performed a randomized, controlled, double-blind, parallel-group intervention study. Seventy-four subjects were recruited. The diet was monitored by food records. The study began with a 2-week run-in period followed by an 8-week intervention period. During the intervention, subjects consumed 1000 ml/day fortified mineral water or normal mineral water. Pregnancies were followed-up carefully.

**Results:** The folate intake was 255 µg/d in the study group and 274 µg/d in controls. Serum folate concentrations increased in the study group 10.3 nmol/l and decreased in the controls 2,7 nmol/l (p<0.05). The erythrocyte folate concentrations increased in the study group 360,9 nmol/l and in controls 195,6 nmol/l ( p=0.004 ). Serum homocysteine concentrations fell in the study group 1,1 µmol/l and in controls 0,3 µmol/l ( p<0.05). There were no statistical differences in B12- vitamin concentrations, fetal Doppler velocimetry, or outcome of pregnancies.

**Conclusions:** Finnish pregnant women have low dietary folate intake. Fortified mineral water improved folate status and reduced plasma homocysteine concentrations in pregnant subjects. It will increase the number of products fortified with folic acid therefore helping to ensure especially pregnant women to achieve the desired increase of folate intake without caloric intake.

## P 29

### Adiponectin, placental growth hormone and hPL in preeclamptic vs. normotensive pregnancies

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**Background:** Levels of adiponectin have been observed to be increased in preeclamptic pregnancies, implying an association between adipose tissues and hypertensive disorders in pregnancy. Likewise, an association between adipose tissue and placental growth hormone (PGH) has been suggested.

**Objective:** To investigate levels of adiponectin and PGH in preeclamptic and normotensive pregnancies at a similar gestational age.

**Methods:** In a cohort of pregnant women, non-fasting blood samples were taken in gestational week 18 - 20 and in the third trimester. Repeated blood samples were available from 19 preeclamptic women (blood pressure > 140/90 mmHg and proteinuria (> 0.3 g/24 hours). For each case, 2 matching normotensive pregnant women were selected. Serum was analysed for levels of adiponectin using an in-house time-resolved immunofluorometric assay, and for PGH and hPL using commercially available assays.

**Results:** In gestational week 18 - 20, no significant difference was observed between adiponectin levels in the two groups, whereas in the third trimester, adiponectin levels were higher among preeclamptic women (11.9 ± 6.9 mg/l vs. 8.6 ± 2.0 mg/l; p = 0.047). No significant differences were observed between third trimester levels of PGH or hPL in the two groups.

**Conclusion:** Adiponectin levels appear to differ in pregnancy between preeclamptic and normotensive pregnancies, but only after the hypertensive disorder has developed.

In contrast, the placentally derived hormones PGH and hPL were similar in the two groups.

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## P 30

### Similar anaesthetic onset time of 2-chloroprocaine and lidocaine with epinephrine

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**Background:** In parturients with an epidural catheter placed previously for labour analgesia, extension of the epidural block may be the preferred option, provided adequate speed of onset and adequate surgical anaesthesia are obtained within the time limits decided by the obstetrician.

**Objective:** In this prospective, randomized double-blind trial we compared the speed of onset and anaesthetic quality of 2-chloroprocaine to a solution of lidocaine with one additive, adrenaline 5µg/ml. Hypothesis: The speed and quality of anaesthesia with 2-chloroprocaine (30 mg/ml) with no additives were similar to lidocaine (20mg/ml) with one additive, epinephrine (5 µg/ml).

**Methods:** Forty ASA I patients, scheduled for elective Caesarean Section, were randomly assigned into two groups, one group received 2 - chloroprocaine, and the other group received the same amount (ml) of lidocaine. The speed of onset was defined as time taken to loss of

cold sensation from 70% ethanol application at thoracic dermatome level 5 (Th 5).

**Results:** The time to achieve loss of cold sensation at Th 5 was similar in both groups: Median 8 minutes (range 4-13) in the 2-chloroprocaine group versus 5 minutes (range 2-22) in the lidocaine group (ns). Epidural anaesthesia was successful for surgery in all but one (lidocaine group) patient. There was no significant difference in the need of supplemental IV alfentanil between the two groups: 30% vs. 20% of the patients, 2-chloroprocaine and lidocaine respectively; and the pain scores (VAS) were also similar. Intraoperative complications occurred with similar frequency, and none were serious.

**Conclusions:** Both 2-chloroprocaine and lidocaine have a rapid onset of effect and are suitable local anaesthetic agents for Caesarean section. In view of time taken for preparation potential of logistic problems when an additive is used, a pre-made solution, such as 2-chloroprocaine, may be preferred.

## P 31

### The concentration of complexes of the proform of Eosinophil Major Basic Protein (proMBP) and Pregnancy specific glycoprotein 1 (SP1) are maternal serum markers for fetal Down syndrome in pregnancy Week 6 - 8: The concept of very early serum screening

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**Background, Objective:** The proform of eosinophil major basic protein (ProMBP) and pregnancy specific glycoprotein 1 (SP1) are synthesised in the human placenta during pregnancy. In the circulation, proMBP is known to exist in covalent complexes with other proteins, primarily pregnancy-associated plasma protein-A (PAPP-A/proMBP), and angiotensinogen (Ang/proMBP). We evaluated the discriminating potential of the maternal serum concentrations of all proMBP complexes (total proMBP) and Ang/proMBP complex combined with SP1 in first trimester screening for Down's syndrome (DS).

**Methods:** The serum concentrations of total proMBP and of the Ang/proMBP subfraction were determined by ELISA in 39 women with a Down syndrome fetus and 123 unaffected pregnancies in week 4 - 14 of gestation, and distributions of gestational age-independent concentration values (MoMs) were established. The performance of the Ang/proMBP complex and of total proMBP as first trimester markers for Down syndrome in combination with age and SP1 was assessed through a Monte Carlo simulation procedure.

**Results:** The total concentration of proMBP was reduced to a median MoM of 0.70 in week 6 - 8 ( $p = 0.015$ ) in DS pregnancies, whereas Ang/proMBP was not significantly reduced. Using a standardised age-distribution of pregnant women and published a priori risks for giving birth to a DS child, the detection rate (DR) for DS was estimated to be 41 % for a false positive rate (FPR) of 5% for proMBP and age. With supplement of nuchal translucency, a DR of 76 % for a FPR of 5% could be obtained. Further combining these markers with SP1, a DR of 84 % was estimated for a 5% FPR and 71% for a FPR of 1%.

**Conclusions:** Total proMBP is a promising marker for Down's syndrome in 6 - 8 weeks of gestation and particular in combination with

SP1. The combined use of ProMBP, SP1 and age constitute a prototype for very early first trimester serum screening for Down syndrome

## P 32

### Maternal obesity and neonatal mortality in preterm infants. A study within the Danish National Birth Cohort

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**Background, Objective:** An increased mortality in preterm infants of mothers with a high prepregnancy body mass index (BMI) have been reported (Br Med J 1988;296:1495-97, Am J Clin Nutr 1990;52:273-79), but these findings have not been replicated in recent data. We investigated if this association was present in data from a contemporary Danish cohort.

**Methods:** The association between prepregnancy BMI and neonatal mortality in preterm infants was examined in 3410 liveborn preterm singletons of mothers in The Danish National Birth Cohort (1996-2002), who were interviewed during the 2nd trimester. Information about pregnancy outcomes and neonatal deaths ( $n=87$ ) was obtained from the National Discharge Register and the Birth Register. Cox's regression analyses were used to estimate the impact of maternal BMI and subtypes of preterm birth on the child's survival. Results are presented as hazards ratios (HR) with 95% confidence intervals.

**Results:** Neonatal mortality in preterm infants born after preterm premature rupture of membranes (PPROM) was significantly increased if they were born to a mother with a high BMI (BMI 25+) compared to a normal-weight mother ( $18.5 \leq \text{BMI} < 25$ ) (HR: 8.4 (2.4-36.3)). This finding was significantly different from neonatal mortality after spontaneous preterm birth without PPRM, which did not depend on maternal BMI (HR: 1.3 (0.7-2.6)). Adjustment for gestational age lowered both estimates (HRs: 3.7 (1.0-13.2) and 0.7 (0.3-1.3), respectively), but the interaction persisted, and the conclusions remained unchanged.

**Conclusion:** We found an association between high prepregnancy BMI and neonatal mortality in preterm children born after PPRM, but not in preterm children from births without PPRM. The underlying mechanisms for these observations are unknown, but an interaction between obesity and perinatal infection may be part of the pathway.



### Susceptibility of 64 clinical isolates from vaginal mycoses to a new propiconazole derivative

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**Background:** Vaginal candidosis represents a significant health problem to women of childbearing age worldwide. Inflammation of the vulva and/or vagina is caused by yeasts of the genus *Candida*, primarily by the species *Candida albicans* and *Candida glabrata*. Infections with other species are very rare. Nowadays, the resistance to usual antifungals, especially to azoles, is increasing.

**Objectives:** To evaluate the antifungal activity of a new propiconazole derivative against 64 strains of yeast species isolated from vulvovaginitis under in vitro conditions resembling the vaginal microenvironment.

**Method:** We performed the susceptibility testing in a vagina-simulative medium using the NCCLS M27-A2 standard guidelines. The range of tested concentrations was based on a 2 fold dilution series and it varied between 0.0625-16 mg/L. Interpretation of results was performed after 48 hours of incubation at 35°C. The minimal inhibitory concentration (MIC) was considered the lowest concentration of the drug which corresponds to 80% reduction in turbidity compared with that of the drug-free growth control.

**Results:** The MIC<sub>90</sub> was 0.5 mg/L and the MIC<sub>50</sub> was 0.0625 mg/L respectively. The tests exhibited low MICs for all strains which may be useful in using of this new azole compound for treatment of mycotic vaginitis. Since the interpretative breakpoints are yet unknown the clinical relevance of testing remains uncertain.

**Conclusions:** The results encourage the future researches in order to determine the interpretative breakpoints, to evaluate the in vitro - in vivo correlations, and to evaluate the appropriate doses in order to start clinical trials.

## P 34

### Comparative study of the efficacy of tranexamic acid, mefenamic acid and norethisterone in menorrhagia treatment

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**Background:** A wide range of medical therapies has been used for menorrhagia treatment although not all show similar efficacy. There has been no comparative study of tranexamic acid and other usual drugs for treating menorrhagia in Asia.

**Objective:** To compare the clinical efficacy of tranexamic acid, mefenamic acid and norethisterone in the treatment of ovulatory menorrhagia.

**Methods:** This randomized controlled trial was performed at four hospitals in Thailand. One hundred and sixty-nine (169) women with ovulatory menorrhagia, confirmed by mid-luteal progesterone level over 5 ng/ml, were randomized to take one of three treatment regimens during two consecutive cycles : tranexamic acid 3 g daily on day 1-5, mefenamic acid 1.5 g daily on day 1-5, norethisterone 10 mg daily on day 19-26 of menses. Menstrual blood loss was measured by the Pictorial Blood Loss Assessment Chart (PBAC) in pre-treatment, treatment and post-treatment cycles. Other information collected from interviewing and physical examination was recorded.

**Results:** Menstrual blood loss was reduced in all treatment groups. Mean PBAC scores before and during treatment in tranexamic acid, mefenamic acid and norethisterone groups were 344.6 vs. 204.4, 359.9 vs. 278.3 and 359.6 vs. 298.7 respectively. The reduction in menstrual blood loss was significantly greater for tranexamic acid when compared with the other two drugs. Only women treated with tranexamic acid reported shorter duration of menstruation and less number of sanitary pads used.

**Conclusion:** Tranexamic acid was shown in this first comparative study in Asia to have the highest efficacy in the treatment of ovulatory menorrhagia.

## P 35

### Psychological aspects of endometriosis. The role of coping, emotional inhibition, depression, and anxiety in endometriosis

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**Background:** The intensity of pain related to endometriosis does not correspond to the stage of disease. It has been suggested that psychological factors may contribute to this disproportion.

**Objective:** The purpose of this study was to elucidate psychological aspects of endometriosis.

**Methods:** Sixty-three laparoscopic-diagnosed women with endometriosis and 29 controls completed four psychometric tests assessing coping, emotional inhibition, anxiety, and depression. Information about pain symptoms and psycho-social impairment in the patient group was obtained in a questionnaire.

**Results:** The women with endometriosis scored significantly higher on emotional inhibition, depression, and anxiety compared with controls. In addition, significant correlation was found between coping and anxiety/depression in patients with pain. No correlation between pain severity and depression or anxiety was found.

**Conclusions:** Strong correlation between coping dimensions on the one hand and levels of depression, anxiety, and psycho-social impairment on the other in patients with pain supports the idea that coping mediates emotional stress responses to pain and interferes with psycho-social functioning. This may have implications for the treatment of endometriosis. The study did not show any significant differences in anxiety or depression between patients with or without pain. This is inconsistent with pain research associating (chronic) pain and endometriosis with raised levels of depression and anxiety. However, a marginally significant higher level of anxiety in patients with pain might indicate that larger group sizes would have shown the expected difference. In conclusion, this study confirms the relevance of considering psychological aspects of endometriosis. Further studies should focus on

the benefit of reinforcing individual resources and active pain-coping skills as an alternative or additive treatment for pain caused by endometriosis.

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## P 36

### Use of pH/whiff test or QuickVue Advanced® pH and Amines test to diagnose bacterial vaginosis and prevent postabortal endometritis

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**Background:** Untreated bacterial vaginosis (BV) is a risk factor for postabortal endometritis.

**Methods:** Eight hundred and eight women who requested therapeutic abortion were consecutively examined for the presence of BV, using either pH/whiff test or QuickVue Advanced® pH and Amines test. All patients who tested positive to BV were treated with clindamycin or metronidazole prior to abortion.

**Results:** Based on the wet smear examination, the incidence of BV was 21.6%. Positive pH and whiff test had a sensitivity of 53%, specificity of 98% and Kappa index 0.59 (n=239). Values for QuickVue Advanced® pH and Amines test were 53%, 97% and 0.58 respectively (n=508). The incidence of endometritis among all patients was 2.4% after pharmacological abortion and 4.9% after surgical abortion. Among the patients with microscopic presence of BV, diagnosed positive by the pH/whiff test or QuickVue Advanced® pH and Amines test and treated with antibiotics no endometritis occurred. Patients with negative pH/whiff test or QuickVue pH and amines test who consequently did not receive preoperative antibiotics, but who later demonstrated microscopic presence of BV had an incidence of 14.3 % (5/35) postoperative endometritis compared to women with normal lactobacilli flora 4.3 % (10/234) OR 3.73 ; 95% CI 1.21-9.21).

**Conclusions:** Although the pH/whiff test and QuickVue pH and amines test failed to ascertain BV in almost half of the participants later found to have BV, we found that preabortal screening and subsequent treatment of those who test clinically positive, does lower the incidence of postabortal endometritis.

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## P 37

### The stability of aging male symptoms (ams) score in finnish middle-aged men

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**Background:** Androgens decrease in aging men. This is presumed to be accompanied by specific symptoms, commonly referred to as "andropausal" symptoms. The existence and the sustainability of the symptoms are inconclusively reported.

**Objective:** To determine the stability of symptoms associated with late-onset hypogonadism (LOH) in Finnish middle-aged men.

**Methods:** Randomly selected 600 men from the city of Turku, Finland received Aging Male Symptoms Scale (AMS) -questionnaire two times during the years 1999 and 2000 (time range of 3-6 months). These men were 40-70 -years of age, 100 men in each 5-year age category.

**Results:** The results are based on the response of 212 questionnaires. The mean age of the respondents was 57,7 ± 8,3 years. AMS scores were 31,0 ± 10,7 in year 1999 and 31,3 ± 10,6 in year 2000, respectively. The positive criteria for symptomatic LOH were fulfilled in 21,5% and in 18,3% of the respondents in 1999 and 2000, respectively. However, only 11,1% fulfilled the criteria in two consecutive questionnaires.

**Conclusions:** According to this study the symptoms associated with LOH in aging males are relatively common, however, their existence seems to vary and the stability is less evident.

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## P 38

### Combined oral contraceptive used in an extended regimen over 126 days

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**Background:** Many women prefer a hormonal contraceptive giving less or none bleeding.

**Objective:** the study was performed to assess the bleeding profile and acceptance of 126-day with continuous use of an oral contraceptive containing 30µg ethinylestradiol and 3mg drospirenone (Yasmin®).

**Methods:** 177 were assigned to an extended 126-day regimen of Yasmin®. Daily records of bleedings were registered and at the end of the study period a questionnaire concerning acceptance was completed.

**Results:** 143 (81%) completed the study. 38% had no bleeding, 32% had scanty bleedings, 24% had bleedings with normal intensity and 6% had heavy bleedings. The first bleeding episode occurred after a median of 99 days. 68% of all users were satisfied with this regimen, and 42% wanted to continue with an extended regimen whereas 49% preferred the conventional 21+7 days cycles and 6% chose other options.

**Conclusion:** An extended use of 30µg ethinylestradiol and 3mg drospirenone through 126 days is well accepted by most users and results in considerable less bleeding.

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## P 39

### Trends in gynaecological surgery in Finland 1987 - 2004

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**Background:** The development of health care system has a certain influence on the trends in surgery i.e. the number of procedures in use. Similarly the follow-up of annual number of surgical procedures can and should have certain impact to health care politics and its development.

**Objective:** This study was aimed to analyze the trends in gynaecological surgery in Finland over the past two decades during which time a comprehensive change took place in the number and variety of procedures in this field.

**Methods:** The national Discharge Registry in Finland has served as a basis for the collection of all the gynaecological procedures performed in Finnish hospitals since 1987. The annual variation of different major procedures in gynaecology and their follow-up from 1987 - 2004 was analyzed to evaluate the trends in these procedures.

**Results:** Hysterectomy has been the most prevalent procedure in women in Finland in 1980's and 1990's. This gynaecological index operation showed a low increasing trend until 1998 and a subsequent decrease until the present. Since the early 1990's the distribution of different types of hysterectomies showed an increase in laparoscopic approach as well as in vaginal hysterectomies. The abdominal (i.e. open) hysterectomies have decreased in numbers under that of vaginal ones and are rather similar to the number of laparoscopic hysterectomies in 2004. Previously popular supravaginal amputations have almost disappeared and in 2004 only 194 (2.1%) supravaginal procedures (mostly elective) out of 9234 hysterectomies were performed. Another dramatic change in surgical procedures in gynaecology has happened in incontinence surgery. The old golden standard, the Burch procedure, has been replaced initially by TVT in late 1990's and more recently by TOT.

**Conclusions:** The evaluation of the trends of gynaecological surgery recalls a critical and regional analysis of the outcome: on one hand to the morbidity and on the other hand to the politics and economics related to these procedures. Consequently, these data can be used to assist the development of national health care services in gynecology in Finland.

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#### P 40

##### **Botox therapy for women diagnosed with provoked vestibulodynia**

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**Background:** Provoked vulvodynia also known as vestibulodynia is defined as vulvar dysaesthesia or discomfort by intromission. A randomised, placebo controlled study with BOTOX on women with provoked vestibulodynia has never been published.

**Objectives and hypotheses:** The aim of this dobbelblinded, randomised, placebo controlled investigation is to study the effect of BOTOX, injected into the female vestibule, by monitoring the level of pain with a Visual Analogue Scale (VAS). The authors hypothesize that treating provoked vestibulodynia with Botox will lead to pain relief or reduced level of pain.

**Methods:** 11 women referred to a vulva clinic in Copenhagen and diagnosed with provoked vestibulodynia. All women were randomised to Botox (20 units) or saline (0,9 % NaCl/ H<sub>2</sub>O, 0,5 mL). Botox or saline was injected into the vestibule under EMG-guidance. Pain assessment by VAS was repeated every 4 weeks until 6 months post treatment.

**Results:** Six women had received Botox and five women placebo. The mean VAS in the Botox group was 7,7 prior to treatment, 6,5 after 3 months and 5,2 after 6 months. The mean VAS in the Placebo group was 6,6 prior to treatment, 3,6 after 3 months and 3,0 after 6 months. Between the two groups a statistical significant difference in regard to the VAS was not found after 6 months. Within the two groups, the decrease in the VAS from prior to treatment until 3 and 6 months after treatment, was not statistical significant.

**Conclusions:** This study implies that women diagnosed with provoked vestibulodynia and treated with Botox shows no sign of improvement after 6 months in regard to VAS.

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#### P 41

Abstract withdrawn

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#### P 42

##### **Total or subtotal hysterectomy - a metaanalysis**

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**Background:** Total and subtotal abdominal hysterectomy for benign indications have been compared in randomized clinical trials and observational studies.

**Objective:** A meta-analysis is performed to summarize the evidence of the matter.

**Hypothesis:** Total abdominal hysterectomy is superior to subtotal hysterectomy regarding urinary incontinence and prolapse.

**Methods:** Thirty three randomized clinical trials and observational studies comparing total and subtotal abdominal hysterectomy for benign indications were included. Endpoints were self-reported urinary incontinence, postoperative complications, operation time, quality of life, constipation, prolapse, sexual functioning, pelvic pain, and cervical stump problems after subtotal hysterectomy. Odds ratios and tests for heterogeneity and over all effect were calculated.

**Results:** Urinary incontinence and prolapse showed a significant difference favoring the total hysterectomy. Some of the women having a subtotal hysterectomy continued to suffer from vaginal bleeding after the hysterectomy. Three studies reported one or more women having abnormal cervical cytology. Operation time, peroperative bleeding, and postoperative complications were significantly in favor of the subtotal hysterectomy. Lower urinary tract symptoms other than incontinence, quality of life, constipation, pelvic pain, and sexual life were not in favor of any of the hysterectomy methods.

**Conclusion:** In conclusion, total hysterectomy differs from subtotal hysterectomy by less women suffering from urinary incontinence and prolapse and cervical stump problems after hysterectomy. However, subtotal hysterectomy is faster to perform, has less peroperative bleeding, and seems to have less intra- and postoperative complications especially regarding infections. The difference of operation time and peroperative bleeding have no clinical importance.

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#### P 43

Abstract withdrawn

### A critical review of patient-rated quality of life studies at long-term after treatment for cervical cancer

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**Background, Objective:** Increasing survival rate of cervical cancer (CC) patients have led to focus on the quality of life (QOL) of the survivors (CCSs). A growing number of studies related to various aspects of QOL in CCSs have been published, but a systematic overview of the literature is lacking. The aim of this review was to evaluate the measures used in QOL studies, and to discuss research findings of QOL in CCSs in terms of physical, psychosocial, and sexual well-being.

**Methods:** We searched databases (MEDLINE, EMBASE, CINAHL, PsycINFO and CENTRAL) and reference lists to identify potential studies. Studies based on questionnaires rated at follow-up more than one year after treatment were included. A criteria-based quality assessment of methodology was performed to distinguish between methodologically satisfying and less satisfying studies.

**Results:** The search identified 516 abstracts, and a total of 23 studies met the inclusion criteria. Eight studies were considered to have a good methodology. Nine studies used at least one questionnaire that had not been previously validated, and only two of the validated questionnaires had been tested in previous studies of CCSs. Due to the methodological shortcomings of many of the studies, definite conclusions as to the QOL of CCSs cannot be drawn, but the trend is that the patients have more psychosocial and sexual problems following radiotherapy compared to surgery alone. In earlier stages of cervical cancer and following surgery alone, there seem to be minimal differences between CCSs and other gynecological cancer groups, or the general population, as to the various QOL domains.

**Conclusions:** There is a great variety in study designs and measures used in the field of QOL in CCSs, and larger, better designed prospective studies are needed. Future research should pay more attention to fatigue, anxiety, and depression in CCSs, as well as to physical problems such as lymph edema and bowel problems.

## P 45

### The prevalence of haemorrhage and duration of surgery in radical abdominal hysterectomy - before and after use of diathermy

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**Objective:** The aim of the study was to evaluate the use of diathermy in radical abdominal hysterectomy.

**Methods:** Retrospective record review including 197 patients who had a radical abdominal hysterectomy with systematic pelvic lymphadenectomy for stage IB-IIA cervical cancer between January 1996 and December 2005 at Skejby Hospital, Aarhus, Denmark. During the period, January 1996 and December 2000, 150 radical abdominal hysterectomies were performed by resection with clamps and ligature in the parametrium, paracolpic tissue and the vaginal cuff. During

the period, January 2003 and December 2005, 47 radical abdominal hysterectomies were performed with monopolar diathermy, Erbe Vio 300 D. The diathermy was used in the skin, sub cutis, fascie, parametrium, paracolpic tissue and vaginal cuff. Four surgeons with gynecologic oncology sub speciality operated the patients consecutive during the investigation period. There was no difference in the surgical performances. The statistical analysis was performed by using the non-parametric Mann-Whitney's test and step-wise manual regression analysis.

**Results:** The duration of surgery was significantly lower in the diathermy-group compared to the non-diathermy group (mean 94 min. (95% CI. 86-101) versus 116 min. (95% CI. 112-119),  $p < 0.0001$ ). There was no difference in the amount of haemorrhage between the two groups (mean 453 ml. (95 % CI. 377-529) versus 524 ml. (95 % CI. 464-585),  $P < 0.06$ ). Body Mass Index and age did not differ significantly. Duration of postoperative stay was significantly shorter in the diathermy-group (mean 7.5 days (95 % CI. 7.1-7.9) versus 8.7 days (95 % CI. 8.2-9.1),  $p < 0.006$ ).

**Conclusion:** We found that the use of diathermy in radical abdominal hysterectomy significantly reduced the operation time. There was no significant difference in haemorrhage during the operation. Diathermy is useful in radical abdominal hysterectomy to save operation time and is associated to a shorter postoperative stay.

## P 46

### Granulosa cell tumors of the ovary in Turku University Central Hospital (TUCH) 1970-2003

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**Background:** Granulosa cell tumors of the ovary are rare tumors with a tendency of late relapse and good prognosis. Stage, size of tumor, degree of cellular atypia and mitotic index have been reported to be associated with relapse.

**Objectives:** To evaluate treatment practice and prognosis of patients diagnosed with granulosa cell tumor of the ovary in TUCH during years 1970-2003

**Methods:** Review of patient records and pathological evaluation of tumor samples, including estimation of growth pattern, presence of Call-Exner bodies, nuclear grooving, mitotic index and immunohistochemical staining for inhibin and Ki67.

**Results:** 36 patients were diagnosed with a histologically verified granulosa cell tumor. 4 patients had a simultaneous endometrial adenocarcinoma. 7 of the patients experienced relapse. Time from treatment to first relapse varied from 24 months (2 years) to 141 months (11 years 9 months). All tumors stained positive for inhibin. There was no difference in mitotic index and Ki67 staining between non-relapsed and relapsed patients. In all the patients, who experienced relapse, the tumor was originally over 5 cm in size, had ruptured during operation and showed a diffuse growth pattern. One patient has experienced seven relapses, has been treated with surgery, radiation therapy, chemotherapy and hormonal therapy, and is still alive 26 years from diagnosis.

**Conclusions:** Besides stage and tumor size, there are no good prognostic indicators for a risk of relapse in patients with a granulosa cell ovarian tumor. Treatment of relapse, even in case of multiple recurrences, is usually worthwhile.



### Ovarian cyst formation in fertile women treated with Mitotane® due to adrenocortical carcinoma

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**Background:** Adrenocortical carcinoma (ACC) is a rare, aggressive and hormonally active tumour. As an adjuvant therapy after radical surgery, the treatment with Mitotane® (1-(2-chlorophenyl)-1(4-chlorophenyl)-2,2 dichloroethane) has been shown to inhibit growth of adrenal cortical cells. In fertile women receiving Mitotane® we have repeatedly observed the development of ovarian cyst verified by CT and vaginal ultrasound. Follow-up has shown spontaneous resolution of cysts and benign histology.

**Hypothesis:** Mitotane® blocks cortisol synthesis in adrenal cells by enzymatic inhibition. Does Mitotane® disturb ovarian function also by a direct action on the ovary?

**Method:** Steroid production and cell proliferation (incorporation of tritiated thymidine) were studied in pooled human granulosa cells, harvested from IVF stimulated follicles and cultured in the presence and absence of hCG and Mitotane® (10<sup>-7</sup>, 10<sup>-6</sup>, 10<sup>-5</sup> M).

**Results:** HCG dose-dependently stimulated progesterone release into the culture medium. The progesterone formation was lowered by the addition of Mitotane® and the compound also reduced HCG stimulated progesterone production. Mitotane®, and surprisingly also HCG, reduced cell proliferation.

**Conclusion:** Mitotane® appears to affect both proliferation and differentiation of human ovarian granulosa cells. Possible reasons for ovarian cyst formation is a disturbance of the feed back between both adrenal and ovarian steroids and the pituitary secretion of gonadotrophins.

## P 48

### Surgery of borderline tumors of the ovary - laparoscopy versus laparotomy

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**Objectives:** Retrospective evaluation of surgical treatment of patients with borderline ovarian tumors (BOT), comparing laparoscopic and laparotomic approach.

**Material and methods:** Review of medical records of patients with BOT, FIGO stage I, who were primary operated at our department during a 5 year period (January 2000 - December 2004).

**Results:** 100 patients with BOT, FIGO stage I, were operated, 48 with serous, 50 mucinous and 2 endometrioid BOT. Of these, 34 patients were operated with laparoscopy alone and 66 with laparotomy (of which 13 patients had conversion from laparoscopy to laparotomy). In the group operated with laparoscopy, more women were premenopausal and tumor diameter was smaller than in the group operated with laparotomy (56% versus 14% premenopausal, and 9 versus 16 cm) More patients operated by laparoscopy had intraoperative tumor rupture as compared those operated with laparotomy

(29% versus 16%). Follow-up time was from 14 to 72 months, with no relapses in either group. Less postoperative complications occurred in patients operated with laparoscopy.

**Conclusion:** Patients with borderline tumors of the ovary, FIGO stage I, have a favourable prognosis, and laparoscopic treatment with less complications might be favourable. Intraoperative tumor rupture is more frequent with laparoscopic approach and protection of the abdominal wall and peritoneum by use of endobag without spilling might be of clinical importance. Long term follow-up is necessary to evaluate whether more frequent spilling makes a difference on tumor relapse.

## P 49

### Nocturia and body mass index among women - results of treatment and improvement in quality of life after treatment

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**Background:** In previous studies we have shown that Body Mass Index (BMI) is important for the result of treatment when treating women for urinary incontinence. The higher the BMI, the more difficult the patients were to treat. We wanted to see if this was the same in patients with nocturia by looking at the effect of treatment and the improvement in quality of life after treatment.

**Methods:** The participants were women seeking treatment for lower urinary tract symptoms including nocturia (n=935). At study entrance they received a questionnaire in which they were asked to report height, weight and number of voids per night. After relevant treatment they were asked to evaluate the effect of treatment. Furthermore 514 patients were asked to plot in the degree of discomfort in a Visual Analogue Scale (0-21 points) before and after treatment. Their BMI was calculated and the women were classified as being non-overweight (BMI < 25 kg/m<sup>2</sup>), overweight (BMI from 25 to 30 kg/m<sup>2</sup>) or obese (BMI > 30 kg/m<sup>2</sup>) in accordance with WHO recommendation.

**Results:** The group of obese women have a higher frequency of voids per night, on average 2.75 voids, while the remaining group has a frequency of 2.3. The result of treatment was that on average 76% were cured/considerable better, whereas the result in the group of obese women was 73%. The result of the VAS-plotting shows that the improvement in quality of life was almost the same in the 3 groups; the discomfort was reduced by 67 % in the group of non-overweight women, 69% among the overweight and 71 % in the group of obese women.

**Conclusion:** Our study shows that 76 % of all patients with nocturia have a good effect of treatment and a major improvement in quality of life after treatment. In the group of obese women there was a tendency towards a higher number of voids, less effect of treatment but a higher improvement in quality of life after treatment. However, the differences were not significant.

### The female overactive bladder - does it really exist?

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**Problem:** Female urge incontinence (FUI) is a common and costly disease that negatively impacts quality of life. The definition of FUI includes terms as "detrusor instability", "overactive bladder" and "detrusor overactivity" indicating that the mechanism of the disease is not clearly understood.

**Aim of the study:** To study the mechanisms behind FUI, especially the rationales for the concept "overactive bladder".

**Patients:** One hundred consecutive ambulatory patients without urinary problems where scanned for urethral tenderness. Ten consecutive patients with FUI using pads where studied by urinary cultures, urine microscopy, urinary diaries and cystoscopy, and where treated with urethral application of steroids and urethral massage at four to five sessions.

**Results:** Urethral tenderness is uncommon without urinary problems. Bladder capacity is usually normal in patients with FUI. There were very few complains of urge during bladder filling for cystoscopy. Patients with FUI report urethral tenderness at vaginal palpation. Urethral application of mild steroids combined with massage increases urinary volumes, decreases voiding frequency and relieves urge.

**Conclusion:** The trigger of FUI is often to be found in the urethra and not in the bladder. The rationales of treating FUI with urinary spasmolytics may be questioned.

### P 51

#### Nocturia and associated morbidity in a Danish population of men and women aged 60-80 years

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**Objective:** To evaluate the association between nocturia >1, >2 and >3 times and medical diseases, medication, urinary incontinence, recurrent cystitis, smoking, alcohol, deliveries, hysterectomy, pelvic organ prolapse surgery, urinary incontinence surgery, and prostate surgery.

**Methods:** A postal questionnaire was sent to 2000 women and 2000 men aged 60, 65, 70, 75, and 80 years. The population was selected at random from The Danish Civil Registration System (CPR), in which every person living in Denmark is identified. The previously validated questionnaire NNES-Q (The Nocturia, Nocturnal Enuresis and Sleep-interruption Questionnaire) was used for assessing nocturia. Morbidity was evaluated using previously validated questionnaires and newly developed questions. Nocturia was defined as waking up at night to void according to the International Continence Society.

**Results:** Multiple logistic regressions showed that urinary incontinence and age were significantly associated with nocturia irrespective the severity. Nocturia >1 was associated with BMI, hypertension, and smoking. There was significant associations between nocturia >2 and gender, BMI, diabetes and recurrent cystitis, as well as between noctu-

ria >3 and gender, lung disease, diabetes, use of diuretics and recurrent cystitis. Summarizing the associations in an ordinal regression analysis urinary incontinence (OR 2.17, 95% CI: 1.76-2.68), recurrent cystitis (OR 1.97, 95% CI: 1.30-2.97) and diabetes (OR 1.89, 95% CI: 1.32-2.65) had the strongest associations with nocturia.

**Conclusions:** Our results confirm that various disorders are associated with nocturia. However, the associations are strongly dependent on the severity of nocturia. This should be considered in future studies.

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### P 54

#### Chlamydia trachomatis C-complex is a risk factor for preterm birth

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**Background:** Over the past decades the incidence of *Chlamydia trachomatis* infections has increased, as has ectopic pregnancy and spontaneous preterm birth (PTB) in Denmark.

**Objective:** to examine potential associations between current or previous *C. trachomatis* infections (general IgG and serovars) and spontaneous PTB and to explore associations between *C. trachomatis* infections and previous fertility problems. *C. trachomatis* serovars have not previously been examined for possible associations with these outcomes.

**Methods:** The study was performed on a population-based prospective cohort of 2,927 pregnant women. Measures at week 17: Chlamydia antigen, Chlamydia IgG, Chlamydia complex type: B, C, GF and NE. Primary outcome: spontaneous onset preterm birth (<37 completed weeks gestation). Secondary outcomes: infertility treatment, subfertility and ectopic pregnancies. Crude and adjusted Relative Risks (RR) and Odds Ratios (OR) were estimated by logistic regression.

**Results:** Having *C. trachomatis* antibodies of the C-complex type was associated with spontaneous PTB (RR 2.6[1.1-6.2]) and was additionally associated with a prior history of subfertility (OR 4.4[2.5-7.7]), infertility treatment (OR 7.2[4.0-12.8]) or ectopic pregnancy (5.2[2.2-12.4]). The B-complex and the GF-complex were not associated with PTD or with fertility outcomes except that GF-complex was significantly associated with infertility treatment (OR 2.1[1.1-4.0]).

**Conclusions:** A previous infection with *C. trachomatis* C-complex is associated with an increased risk for spontaneous PTB. Further, the *C. trachomatis* C-complex may potentially contribute to subfertility, infertility and ectopic pregnancy. Severity of clinical manifestations after a Chlamydia infection may depend on the Chlamydia complex subtype.