• Fetal growth and neonatal mortality in Korea.
• Influence of medical and psychological interventions on women's distress after miscarriage.
• Periodontal disease and pregnancy outcomes: State-of-the-science.
• Ultrastructural alterations in human decidua in miscarriages compared to normal pregnancy decidua.
• Bed-sharing in the first four months of life: a risk factor for sudden infant death.
• Effect of pacifier use on mandibular position in preterm infants.
• High levels of NK cells in the peripheral blood of patients affected with anti-phospholipid syndrome and recurrent spontaneous abortion: a potential new hypothesis.
• Secondary analysis of race/ethnicity and other maternal factors affecting adverse birth outcomes in San Bernardino County.
• Going to scale with community-based primary care: An analysis of the family health program and infant mortality in Brazil, 1999-2004.
• Spending to save? State health expenditure and infant mortality in India.
• What is the role of regulatory T cells in the success of implantation and early pregnancy?
• Electrocortical functional connectivity in infancy: response to body tilt.
Fetal growth and neonatal mortality in Korea.

The fetal growth curve and neonatal mortality rate, based on gestational age and birthweight, are important for identifying groups of high-risk neonates and developing appropriate medical services and health-care programmes. The purpose of this study was to develop a national fetal growth curve for neonates in Korea, and examine the Korean national references for fetal growth and death according to their characteristics. Data of Korean vital statistics linked National Infant Mortality Survey conducted on births in 1999 were used in this study. The total livebirths were 621 764 in 1999, which were
grouped into singletons (n = 609,643) and twins (n = 9,805) for analysis. Birthweight/gestational age-specific fetal growth curves and neonatal mortality rates were based on 250 g of birthweight and weekly gestational age intervals for each characteristic of the birth. The features of high-risk neonates such as small-for-gestational-age and the limit of viability in Korea were different from those of Western countries. Difference in fetal growth and death was also detected in other characteristics of the fetus (gender and plurality of birth) besides race. The fetal growth curve of males was higher than that of females, and was higher in singleton than in twins. The neonatal mortality rate was higher in males (singleton, 2.6; twin, 23.5) than females (singleton, 2.1; twin, 15.9), and higher in twins (19.8/1000) than in singletons (2.4/1000). However, in neonates with gestational age >29 weeks and birthweight >1000 g, the neonatal mortality rate was lower in twins than in singletons. The limit of viability was gestational age 27 weeks and birthweight 1000 g, which was similar in singletons and twins regardless of gender. To improve the health of neonates in a country, it is imperative to investigate the characteristics of fetal growth and death under the particular circumstances of the country. When risk is defined for neonates account must be taken of differences in race, gender and plurality of birth, as the neonatal mortality rate varies depending on those factors.


OBJECTIVE: The aim of this study was to examine the impact of medical and psychological interventions on women's distress after early miscarriage. METHODS: This was a prospective study of women attending for a routine scan at 10-14 weeks of gestation and found to have a missed miscarriage. An intervention group of 66 women had medical investigations to ascertain the cause of miscarriage, and at 5 weeks after the scan, they all had a medical consultation to discuss the results of the investigations. These 66 women were randomly allocated into a group which received further psychological counselling (MPC, n=33), and a group which received no psychological counselling (MC, n=33). They were compared to a control group of 61 women who received no specific postmiscarriage counselling. All participants completed preintervention and postintervention measures and 4-month follow-up questionnaires. RESULTS: The scores on the outcome variables decreased significantly with time for all three groups. In group MPC, compared to controls, there was a significantly greater decrease over time in the levels of grief, self-blame, and worry and, compared to MC group, a significantly greater decrease in grief and worry. In group MC, compared to controls, there was a significantly greater decrease in self-blame. In the MC and MPC groups, those with an identified cause of the miscarriage had significantly lower levels of anxiety and self-blame over time than those with a nonidentified cause. CONCLUSIONS: Psychological counselling, in addition to medical investigations and consultation, is beneficial in reducing women's distress after miscarriage. However, absence of an identifiable cause of miscarriage led to
the maintenance of the initial anxiety levels, which should have otherwise decreased with time.


To examine the existing evidence on the relationship between periodontal disease and adverse pregnancy outcomes, we conducted a systematic review of studies published up to December 2006. Studies published in full text were identified by searching computerized databases (e.g., MEDLINE, EMBASE). A meta-analysis was performed to pool the effect size of the clinical trials. Forty-four studies were identified (26 case-control studies, 13 cohort studies, and 5 controlled trials). The studies focused on preterm low birth weight, low birth weight, preterm birth, birth weight by gestational age, miscarriage or pregnancy loss, preeclampsia, and gestational diabetes mellitus. Of the chosen studies, 29 suggested an association between periodontal disease and increased risk of adverse pregnancy outcome (odds ratios [ORs] ranging from 1.10 to 20.0) and 15 found no evidence of an association (ORs ranging from 0.78 to 2.54). A meta-analysis of the clinical trials suggested that oral prophylaxis and periodontal treatment may reduce the rate of preterm low birth weight (pooled risk ratio [RR]: 0.53, 95% confidence interval [CI]: 0.30-0.95, P < 0.05), but did not significantly reduce the rates of preterm birth (pooled RR: 0.79, 95% CI: 0.55-1.11, P > 0.05) or low birth weight (pooled RR: 0.86, 95% CI: 0.58%-1.29, P > 0.05). The authors conclude that periodontal disease may be associated with increased risk of adverse pregnancy outcomes. More methodologically rigorous studies are needed in this field. Currently, there is insufficient evidence to support the provision of periodontal treatment during pregnancy for the purpose of reducing adverse pregnancy outcomes. Target Audience: Obstetricians & Gynecologists, Family Physicians Learning Objectives: After completion of this article, the reader should be able to state that the published literature is not vigorous to clinically link periodontal disease and/or its treatment to specific adverse pregnancy outcomes, and explain that more rigorous studies with world-wide agreed-upon definitions are particularly needed before periodontal disease treatment can be recommended.

Full-text available at: http://meta.wkhealth.com/ (not a U.S. Government site)


Background. Pregnant endometrial stroma, an immunologically privileged site in the female reproductive system, is enriched by decidual and natural killer (NK) cells. Since the cellular microenvironment in early pregnancy from the decidual tissues of normal and miscarriage cases has gained importance, with special emphasis on cell-to-cell contacts,
we aimed to document the plastic structure of the cellular milieu in normal and miscarriage decidua. Methods. Endometrial biopsies were obtained from women after legal curettage or women who had been treated by curettage after miscarriage. Samples were analysed in a light microscope (LM), a scanning electron microscope (SEM) and a transmission electron microscope (TEM). Results. Decidual cells possess several polyplloidic protrusions on cell membranes. NK cells were distributed among decidual cells. Decidual cells were found to develop gap junctions in the interfaces between each other. Their cytoplasms were also found to possess well-developed protein synthesising organelles. Decidual cells obtained from miscarriages showed a moderate degree of degeneration and, in between, a decreased number of junctional complexes. Mononuclear cell infiltration was found to be significantly low. Conclusion. We conclude that decidual cells during early pregnancy build a series of miniature cell-cell contacts to assemble a proper endometrial milieu. In contrast, in miscarriage samples, those intercellular communications seem lacking, associated with an increased number of NK cells, a phenomenon which obviously alters proper implantation and leads to the induction of embryonic disgenesis and miscarriage.

Full-text available at: http://www.informaworld.com/ (not a U.S. Government site)


Aim: To investigate the risk of sudden infant death in the Netherlands during bed-sharing in the first half year of life and the protective effect of breastfeeding on it. Methods: During a 10-year period between September 1996 and September 2006 nationwide, 213 cot deaths were investigated. Results and discussion: Of 138 cot deaths of less than 6 months of age, 36 (26%) bed-shared. In a reference group of 1628 babies from infant welfare centres only 9.4% were bed-sharing in the night prior to the interview. After correction for smoking of one or both parents the odds ratio for cot death during bed-sharing with parents decreased with age from 9.1 (CI 4.2-19.4) at 1 month, to 4.0 (CI 2.3-6.7) at 2 months, to 1.7 (CI 0.9-3.4) at 3 months and to 1.3 (CI 1.0-1.6) at 4 through 5 months of age. The excess risk (OR > 1) associated with bed-sharing is itself not significantly influenced by the presence or absence of breastfeeding. Conclusion: Bed-sharing is a serious risk factor for sudden infant death for all babies of less than 4 months of age. From 4 months onwards bed-sharing did not contribute significantly to the risk of cot death anymore in our study.


Tonkin SL, Lui D, McIntosh CG, Rowley S, Knight DB, Gunn AJ. **Effect of pacifier use on mandibular position in preterm infants.** Acta Paediatr. 2007 Aug 20; [Epub ahead of print].
Aim: It has been hypothesized that the association of pacifier use with reduced risk of sudden infant death is mediated by forward movement of the mandible and tongue that helps open the upper airway. Our aim was to examine whether the mandible is moved forward when an infant is sucking on a pacifier, and if so, whether the mandible remains advanced after the pacifier is removed. Methods: In sixty clinically stable premature infants (corrected gestation age 36.5 +/- 0.3 weeks, mean +/- SEM) the distance from each ear where the pinna met the cheek to the most prominent point of the chin was measured bilaterally, and the average was used as an index of mandibular position. Mandibular position was determined before and after allowing the infants to suck on a pacifier for 10-15 min, and after removing the pacifier. Results: There was a significant forward movement of the mandible when the infants were sucking on the pacifier (59.5 +/- 0.7 vs. 58.6 +/- 0.7 mm, p = 0.001), with no significant change after the pacifier was removed. Conclusions: Pacifier use in preterm infants was associated with a small significant forward displacement of the jaw. These data suggest that pacifier use may help protect the upper airway.


Objectives. No data regarding phenotypic assets of circulating lymphocytes in anti-phospholipid syndrome (APS) are reported in the literature. Role of anti-phospholipid antibodies (aPL) in recurrent spontaneous abortion (RSA) remains uncertain, while natural killer (NK)-cells are involved in RSA pathogenesis. In this study, patients affected with APS without RSA, APS with RSA and RSA without aPL were studied for NK-cell subpopulation to evaluate its role in abortive events typical of APS. Methods. NK-cell levels in peripheral blood of APS patients without RSA (n = 28) and in APS-RSA patients (n = 25) were evaluated by means of flow cytofluorimetry. NK-cells levels were evaluated also in RSA without aPL associated with either endocrine (n = 86), anatomic (n = 30) or idiopathic (n = 77) conditions and in 42 healthy women. Results. High NK levels were found in 14/25 (56%) APS-RSA patients. Among these patients, all except one aborted before the 10th gestational week (GW), while among the remaining patients all except one aborted after the 10th GW. NK mean levels were significantly higher in APS-RSA than in all the other conditions studied, including healthy subjects, except idiopathic RSA. Conclusions. Our results demonstrate that the numbers and proportions of NK-cells are significantly higher in patients with RSA with APS than in APS without RSA. Increased numbers of NK-cells correlate with reduced gestational age at abortion in patients with APS-RSA. These data lead to a hypothesis that NK-cells contribute to the development of RSA in patients with APS. NK-cells might precipitate damage initiated by aPL or they might cause pathology in RSA independent of aPL.

Objectives Though it is the largest county in the lower United States, minimal attention has been given to the elevated rates of poor perinatal outcomes and infant mortality in San Bernardino County. This study sought to analyze adverse birth outcomes such as low birth weight, and infant mortality as an outcome of specific proxy maternal sociodemographic factors. Methods Data from the California Department of Health Services Office of Vital Statistics birth cohort of mothers delivering between 1999 and 2001 (N = 1,590,876 participants) were analyzed. Of those, 5.5% (n = 86,736) were births in San Bernardino County. Low birth weight, very low birth weight, death in infants less than one year of age, and other maternal sociodemographic factors were explored. All events of low birth weight and deaths among infants less than one year of age were used as significant variables in statistical models. Results Black mothers experienced more than twice the rate of very low birth weight (3.89) than their White counterparts (1.39). The most significant contributors to adverse birth outcomes among Black women were length of gestation and maternal education, whereas the most significant predictor of infant mortality was birth weight. Conclusions This study demonstrates that traditional risk factors such as length of gestation and maternal age only partially explain adverse birth outcomes. These findings highlight the need to advocate for the systematic collection of data on maternal education and length gestation and for the promotion of public health initiatives that address these inequities in our most vulnerable of populations.


This article assesses the effects of an integrated community-based primary care program (Brazil's Family Health Program, known as the PSF) on microregional variations in infant mortality (IMR), neonatal mortality, and post-neonatal mortality rates from 1999 to 2004. The study utilized a pooled cross-sectional ecological analysis using panel data from Brazilian microregions, and controlled for measures of physicians and hospital beds per 1000 population, Hepatitis B coverage, the proportion of women without prenatal care and with no formal education, low birth weight births, population size, and poverty rates. The data covered all the 557 Brazilian microregions over a 6-year period (1999-2004). Results show that IMR declined about 13 percent from 1999 to 2004, while Family
Health Program coverage increased from an average of about 14 to nearly 60 percent. Controlling for other health determinants, a 10 percent increase in Family Health Program coverage was associated with a 0.45 percent decrease in IMR, a 0.6 percent decline in post-neonatal mortality, and a 1 percent decline in diarrhea mortality (p<0.05). PSF program coverage was not associated with neonatal mortality rates. Lessons learned from the Brazilian experience may be helpful as other countries consider adopting community-based primary care approaches.


Bhalotra S.

**Spending to save? State health expenditure and infant mortality in India.**

Health Econ. 2007 Aug 2; [Epub ahead of print].

There are severe inequalities in health in the world, poor health being concentrated amongst poor people in poor countries. Poor countries spend a much smaller share of national income on health expenditure than do richer countries. What potential lies in political or growth processes that raise this share? This depends upon how effective government health spending in developing countries is. Existing research presents little evidence of an impact on childhood mortality. Using specifications similar to those in the existing literature, this paper finds a similar result for India, which is that state health spending saves no lives. However, upon allowing lagged effects, controlling in a flexible way for trended unobservables and restricting the sample to rural households, a significant effect of health expenditure on infant mortality emerges, the long run elasticity being about -0.24. There are striking differences in the impact by social group. Slicing the data by gender, birth order, religion, maternal and paternal education and maternal age at birth, I find the weakest effects in the most vulnerable groups (with the exception of a large effect for scheduled tribes).


**What is the role of regulatory T cells in the success of implantation and early pregnancy?**

J Assist Reprod Genet. 2007 Aug 1; [Epub ahead of print].

PROBLEM: The immune system is well controlled by the balance between immunostimulation and immunoregulation. CD4(+CD25(+)) regulatory T (Treg) cells and an enzyme called indoleamine-2, 3-dioxygenase (IDO) mediate maternal tolerance of the allogeneic fetus. Treg cells, therefore, may prevent early pregnancy loss due to maternal 'rejection.' METHODS: The latest understanding of tolerance during pregnancy is reviewed. RESULTS AND CONCLUSIONS: Recent data show that CD4(+CD25(+)) Treg cells play essential roles in the induction and maintenance of tolerance, and that they augment the IDO activity in dendritic cells and macrophages. Therefore, CD4(+CD25(+)) Treg cells and IDO enzyme may cooperate in the induction of tolerance during pregnancy. Treg deficiency is associated with very early post-implantation loss
and spontaneous abortion in animal models, and low Treg levels are associated with recurrent miscarriages in humans.

Full-text available at: http://www.springerlink.com/ (not a U.S. Government site)


To test the hypothesis that infant cortical regions activated by a head-up tilt also exhibit increased functional electrocortical connectivity, prone sleeping newborns and 2- to 4-month-old infants were tilted head-up to 30 degrees. Electroencephalogram (EEG) data were collected with 128 electrodes and coherence calculated to quantify electrocortical synchrony. Local coherence, defined as the average of coherence measurements between the EEG at each electrode site and neighboring sites (approximately 1 cm electrode spacing), was found in activated cortical regions that had previously shown increased high-frequency power with tilt. Long-distance coherence was computed between the regions. Newborn infants had significant increases in local coherence in the activated left frontal, right frontal-temporal, and occipital cortical regions; long-distance coherence increased between the right frontal-temporal and occipital regions. In contrast, infants at 2 to 4 months old, the age of maximum risk for sudden infant death syndrome, had no significant changes in coherence. Newborn and 2- to 4-month-old infants thus have different electrocortical responses to a classic cardiovascular challenge.


Twins compared with singletons and monozygous (MZ) compared with dizygous (DZ) twins are at increased risk of fetal and infant death, cerebral palsy and many congenital anomalies. The aim of this study is to investigate whether zygosity is a risk factor for the sudden infant death syndrome (SIDS). Birth registration data and draft infant death certificates for all multiple births in England and Wales 1993 to 2003 were provided by the Office for National Statistics. As a partial proxy for zygosity, same-sex was compared with opposite-sex twins for birthweight-specific mortality and mortality attributed to SIDS. Data on singleton infants were obtained by subtraction of multiple births from routinely published population births and infant deaths. SIDS mortality among low birthweight infants was significantly less in twins than singletons. The twin-singleton relative risk was reversed in infants of normal birthweight. Among infants of normal birthweight, neonatal SIDS was significantly more common in same- compared with opposite-sex pairs. Among infants of low birthweight, postneonatal SIDS was significantly more common in same- compared with opposite-sex pairs. The difference in birthweight distribution of same- compared with opposite-sex twins for neonatal SIDS suggests that zygosity is a risk factor for SIDS. As congenital cerebral anomalies are a
feature of many monozygous twin conceptions, a detailed macro- and microscopical examination of the brain in twin SIDS may indicate an otherwise unrecognised pathology.

Howards PP, Schisterman EF, Heagerty PJ. 
**Potential confounding by exposure history and prior outcomes: An example from perinatal epidemiology.**
Epidemiology. 2007 Jul 31; Publish Ahead of Print [Epub ahead of print].

Prior pregnancy outcomes, such as spontaneous abortion and preterm birth, are often predictive of future pregnancy outcomes. Therefore, many researchers adjust for reproductive history. Although this adjustment may be appropriate for a predictive model, it is not necessarily appropriate when the goal is to obtain an unbiased estimate of the effect of exposure on disease. Reproductive history may seem to meet the conventional criteria for confounding because it is unlikely to be on the causal pathway between exposure and current outcome, is often associated with current outcome, and may be associated with exposure as well. However, whether reproductive history is a confounder or not depends on the underlying reason for its associations with exposure and current outcome. Thus, conventional methods for assessing confounding are often inadequate. Directed acyclic graphs (DAGs) can be used to evaluate complex scenarios for confounding when the research question is clearly defined with respect to the exposure, the outcome, and the effect estimate of interest. Special care is required when reproductive history affects future exposure. We use 5 DAGs to illustrate possible relations between reproductive history and current outcome. We assess each DAG for confounding, and identify the appropriate analytic technique. We provide a numeric example using data from the Collaborative Perinatal Project. There is no single answer as to whether reproductive history should be included in the model; the decision depends on the research question and the underlying DAG.

Abu Mourad T, Radi S, Shashaa S, Lionis C, Philalithis A. 
**Palestinian primary health care in light of the National Strategic Health Plan 1999-2003.**
Public Health. 2007 Jul 27; [Epub ahead of print].

BACKGROUND: In 1994, the Palestinian Health Authority took over responsibility for primary health care (PHC) in Gaza Strip and West Bank. OBJECTIVES: This paper reports on the Palestinian National Strategic Health Plan (PNSHP 1999-2003). The extent to which the PHC objectives were achieved is discussed, together with areas that still require improvement. METHODS: This descriptive study used content analysis with a retrospective review of data gathered from the PNSHP and other related reports and publications. RESULTS: The crude death rate and total fertility rate had improved, but the infant mortality rate had increased by the end of the study period. Heart diseases were
the primary cause of death in Palestine. Acceptable vaccination coverage had mainly been achieved, particularly for tetanus, diphtheria, measles and polio. There were still concerns regarding water supply and other sanitary conditions, a notable increase in the incidence of vector-borne diseases, especially cutaneous Leishmaniasis in West Bank, and mental health had worsened by the end of the study period. CONCLUSIONS: Certain health promotion and environmental health actions should be undertaken urgently by the Palestinian health care services to cope with environmental and sanitary conditions, and to further improve health status regarding communicable and non-communicable diseases in Palestinians. Health research and surveys are insufficient and should be undertaken regularly. The main barrier to the success of the PNSHP was the lack of follow-up due to political and socio-economic instability. There is an urgent need for international intervention and support.


Activation of the laryngeal mucosa results in apnea that is mediated through, and can be elicited via electrical stimulation of, the superior laryngeal nerve (SLN). This potent inhibitory reflex has been suggested to play a role in the pathogenesis of apnea of prematurity and SIDS and is attenuated by theophylline and blockade of GABAA receptors. However, the interaction between GABA and adenosine in the production of SLN stimulation induced apnea has not been previously examined. We hypothesized that activation of adenosine A2A receptors will enhance apnea induced by SLN stimulation while subsequent blockade of GABAA receptors will reverse the effect of A2A receptor activation. The phrenic nerve responses to increasing levels of SLN stimulation were measured before and after sequential intracisternal administration of adenosine A2A receptor agonist CGS (n=10) and GABAA receptor blocker bicuculline (n=7) in ventilated, vagotomized, decerebrate and paralyzed newborn piglets. Increasing levels of SLN stimulation caused progressive inhibition of phrenic activity and lead to apnea during higher levels of stimulation. CGS caused inhibition of baseline phrenic activity, hypotension and enhancement of apnea induced by SLN stimulation. Subsequent bicuculline administration reversed the effects of CGS and prevented the production of apnea when compared to control at higher SLN stimulation levels. We conclude that activation of adenosine A2A receptors enhances SLN stimulation induced apnea probably via a GABAergic pathway. We speculate that SLN stimulation causes endogenous release of adenosine that activates A2A receptors on GABAergic neurons resulting in the release of GABA at inspiratory neurons and subsequent respiratory inhibition.

Full-text available at: http://jap.physiology.org/ (not a U.S. Government site)

Chen A, Basso O.
Does low maternal blood pressure during pregnancy increase the risk of perinatal death?
Epidemiology. 2007 Jul 20;Publish Ahead of Print [Epub ahead of print].

BACKGROUND: A recent report described an association between low maximum diastolic blood pressure (DBP) during pregnancy and perinatal death (stillbirth and death in the first week combined). The authors did not account for gestational length, a strong predictor of perinatal death. METHODS: We studied 41,089 singleton pregnancies from the U.S. Collaborative Perinatal Project (1959-1966). RESULTS: We observed an association between low maximum DBP and elevated risk of perinatal death. However, this association disappeared after accounting for reverse causation related to gestational length. At any given gestational week, women whose offspring ultimately experienced perinatal death did not have significantly lower maximum DBP than women whose offspring survived the perinatal period. When accounting for the trend of increasing DBP during late pregnancy through gestational-age-specific DBP standardized score, we saw no association between low diastolic blood pressure and perinatal death. CONCLUSIONS: Low maximum maternal DBP during pregnancy is a post hoc correlate of perinatal death, not a true risk factor.

Full-text available at: http://meta.wkhealth.com/ (not a U.S. Government site)

Aurore Cote, Aida Bairam, Marianne Deschesne and George Hatzakis.
Sudden infant deaths in sitting devices.
Arch Dis Child. Published Online First: 19 July 2007.

Episodes of decreased oxygenation levels have been recorded in prematurely born infants positioned in car seats. It is therefore believed these infants traveling in car seats are at risk of life-threatening events and even death. No data on the prevalence of such infant deaths are available. The aim of our study was to determine the incidence of sudden deaths occurring in sitting devices in a whole population and to determine whether prematurely born infants represent a disproportionate number of these deaths. Design: Retrospective population based cohort study reviewing all cases of sudden unexpected death in infants between 0 and 365 days of age that occurred in the province of Quebec between January 1991 and December 2000. Results: Of the 508 deaths reviewed, 409 were unexplained and 99 were explained after investigation. Seventeen deaths occurred in a sitting device, of which 10 were unexplained deaths. There was no excess of prematurely born infants dying; there was, however, an excess of infants of less than one month of age found to have died in a sitting position in the unexplained death group. In addition, three infants had an increased risk of upper airway obstruction. Conclusion: Although very few deaths occurred in car seats, our results would suggest that caution be used when placing younger infants in car seats and similar sitting devices, whether the infants had been born prematurely or not. We also recommend that more attention be given to infants at increased risk of upper airway obstruction.

Full-text available at: http://adc.bmj.com/ (not a U.S. Government site)
Glaser A, Bucher H, Moergeli H, Fauchère J, Buechi S.
Loss of a preterm infant: psychological aspects in parents.

QUESTIONS UNDER STUDY: The unexpected death of a preterm infant is an extremely painful situation for parents. Despite a number of quantitative studies, little is known about parents' inner experience. The aim of this study was to gather more in-depth information about what preoccupies parents in this situation of suffering, thus leading to a deeper understanding of their dealing with the stressful event and enabling more adequate support to be provided by professionals. 10 mothers and 9 fathers, who had lost their extremely premature infant born between 24 and 26 weeks of gestation were invited for a semi-structured interview and retrospectively asked about their emotional, cognitive, physical and social experience at three different points in time (time of hospitalisation, 6 months and 3.5-6.5 years after the loss). The interviews were analysed by method of qualitative context analysis. RESULTS: The loss of a preterm infant is an extremely intense experience for parents resulting in a rollercoaster of emotions and perceptions as well as relevant effects on the social network. The strain of this situation notwithstanding, parents also experience positive aspects, eg, feelings of closeness to their infant, comforting thoughts or help from their social network. Although still mourning the loss of their baby, most parents have overcome the tragic event. CONCLUSIONS: Most parents seem to have the psychological strength to overcome the traumatic experience of losing their premature infant and are able to face life normally again. Professionals can play an important role in supporting them. Some parents require additional help to overcome the loss.


Sharma PP, Salihu HM, Kirby RS.
Stillbirth recurrence in a population of relatively low-risk mothers.

We sought to estimate the risk of stillbirth recurrence among relatively low-risk women, a group defined as maternal age <35 years; absence of congenital anomalies; gestational age range of 20-44 weeks inclusive; singleton births; and non-smokers. The Missouri maternally linked data containing births from 1978 to 1997 were used for the study. We identified the study group (low-risk gravidae who experienced a stillbirth in the first pregnancy) and a comparison group (low-risk gravidae who delivered a live birth in their first pregnancy) and compared the stillbirth risks in the second pregnancy between both groups. Analysis was based on 261 384 women with information on first and second pregnancies [1050 (0.5%) women with stillbirth]. Of the 947 cases of stillbirth in the second pregnancy, 20 cases occurred in women with a history of stillbirth (stillbirth rate 19.0 per 1000 births) and 927 in the comparison group (stillbirth rate 3.6 per 1000 births; P<0.001). The adjusted risk of stillbirth was almost six times higher in women with a prior stillbirth (hazard ratio [HR] 5.8, [95% CI 3.7, 9.0]). Analysis by stillbirth subtype in the second pregnancy showed that history of stillbirth conferred greater risk for subsequent early (fetal deaths between 20 and 28 weeks) (HR 10.3, [95% CI 6.1, 17.2])
than late stillbirths (fetal deaths at \(\geq 29\) weeks) (HR 2.5, [95% CI 1.0, 6.0]); and for intrapartum (HR 12.2, [95% CI 4.5, 33.3]) than antepartum (HR 4.2, [95% CI 2.3, 7.7]) stillbirths. Among relatively low-risk women, history of stillbirth was associated with increased recurrence, with substantial heterogeneity by timing of stillbirth.


Di Mario S, Say L, Lincetto O.  
**Risk factors for stillbirth in developing countries: a systematic review of the literature.**  

**OBJECTIVE:** To identify risk factors for stillbirth in developing countries and to measure their impact by calculating the population attributable fraction (PAF) for each risk factor. **STUDY DESIGN:** Systematic review of published studies on risk factors for stillbirth within 3 broadly defined categories: infections, other clinical conditions, and context-dependent conditions such as socioeconomic status, maternal literacy, and receipt of antenatal care. Where statistically significant associations were found between a risk factor and occurrence of stillbirth, the PAF (the proportion of cases occurring in the total population that would be avoided if the exposure was removed) was calculated. **RESULTS:** A total of 33 studies, conducted in 31 developing countries, were included in the review. The definition of stillbirth varied widely in these studies. Risk factors for stillbirth having a PAF higher than 50% were maternal syphilis, chorioamnionitis, maternal malnutrition, lack of antenatal care, and maternal socioeconomic disadvantage. **CONCLUSIONS:** Maternal syphilis prevention, screening and treatment together with other interventions targeting universal use of antenatal care (that includes screening for syphilis) and improving the socioeconomic conditions including nutritional status of the mother, could effectively contribute towards reducing the unacceptably high burden due to stillbirth in developing countries.


Corabian P, Scott NA, Lane C, Guyon G.  
**Guidelines for investigating stillbirths: an update of a systematic review.**  

**OBJECTIVE:** To identify formal, publicly available guidelines for stillbirth investigation and to identify the most appropriate clinical practice guideline (or component of a guideline) for use in Alberta. **METHODS:** A systematic literature search was conducted to identify primary and secondary research studies published between January 1985 and August 2006 and formal, publicly available guidelines on the subject of stillbirth investigation. The Cochrane Library, PubMed, EMBASE, CINAHL, HealthSTAR, Science Citation Index, BIOSIS, and the NHS and CRD databases were searched. The methodological quality of the selected primary research studies was assessed according to specific criteria. **RESULTS:** All six of the publicly available clinical practice guidelines selected for this review outlined similar steps in the stillbirth investigation but differed
about which tests to include and which components should be core or additional investigations. They agreed on including several elements for routine investigation, such as complete autopsy and detailed examination of the cord and placenta. Of 61 retrieved primary research studies, only seven met the inclusion criteria. No studies compared the value of specific guidelines. Although reviewed evidence highlights the value of fetal autopsy and placental examinations as integral components of stillbirth investigation, the value of other components is still not clear. CONCLUSIONS: No firm scientific judgement could be made about which clinical practice guideline for stillbirth investigation is the most appropriate or which components are essential. Currently here is no generally accepted reference guideline for stillbirth investigation. Fetal autopsy and placental examination remain important components, assuming the postmortem examination is of high quality. These data may be helpful in counselling parents who are considering whether or not to consent to a postmortem examination.

Full-text available at: http://www.sogc.org/jogc/ (not a U.S. Government site)


Recurrent spontaneous abortion occurs in approximately 3% of women with diagnosed pregnancies. The etiology in approximately 40% of recurrent spontaneous abortion is unexplained. To elucidate unexplained recurrent spontaneous abortion at the molecular level, we systemically identified differentially expressed genes during implantation window period in unexplained recurrent spontaneous abortion and characterized their functions in a human endometrial cell line. Expression levels of implantation-related genes selected from previously reported, various microarray data were determined to identify differentially expressed genes between normal fertile and unexplained recurrent spontaneous abortion subjects by real-time quantitative RT-PCR. Of 29 implantation-related genes, the transcript levels of cellular retinoic acid binding protein 2 and olfactomedin 1 were higher, whereas that of complement component 4 binding protein alpha was lower in subjects with unexplained recurrent spontaneous abortion, compared to normal fertile subjects. A correlation was evident between the transcript and protein levels of complement component 4 binding protein alpha and cellular retinoic acid binding protein 2. Expression of cellular retinoic acid binding protein 2 was positively correlated with retinoic acid-related genes in normal fertile subjects, but no significant association was observed in unexplained recurrent spontaneous abortion subjects. In relation to complement component 4 binding protein alpha, C5a receptor protein level was significantly higher in subjects with unexplained recurrent spontaneous abortion. Stable expression of cellular retinoic acid binding protein 2 and olfactomedin 1 in a human endometrial cell line inhibited cell growth and induced cell accumulation in the S and G(2)-M phase fractions, but did not trigger apoptosis. This study represents the first systematic identification of differentially expressed genes in unexplained recurrent spontaneous abortion. Defective cell growth by the differentially expressed genes
suggests their implication in implantation failure in women with unexplained recurrent spontaneous abortion.


Côté-Arsenault D.
**Threat appraisal, coping, and emotions across pregnancy subsequent to perinatal loss.**
Nurs Res. 2007 Mar-Apr;56(2):108-16.

BACKGROUND: Pregnancies after perinatal loss are known to be anxiety-filled. Stress in pregnancy and the response to it, often seen as anxiety and depression, have known negative consequences for obstetric outcomes, parenting, and infant behaviors. Women have reported fluctuating emotions in response to events in their subsequent pregnancies, but these pregnancies have not been studied longitudinally. OBJECTIVES: To test Lazarus’ theory of stress, coping, and emotions in this population, and to understand the patterns of threat appraisal, coping, and emotional states of women across pregnancy after perinatal loss. METHODS: In this predictive correlational study, 82 women pregnant after loss (PAL) were followed, and the study was guided longitudinally by Lazarus’ theory of stress, coping, and emotions. Obstetric and loss history, and assigned fetal personhood were gathered at intake (Time 1). Measures completed at 10-week intervals (one time each trimester) included Moneyham Threat Index (threat appraisal), Ways of Coping Checklist-Revised (relative coping), Pregnancy Anxiety Scale (pregnancy anxiety), Multiple Affect Adjective Checklist-Revised (emotional states), and Stress in Life (stress). Time 3 sample size was 70. RESULTS: Threat appraisal was correlated with assigned fetal personhood and gestational age of past loss. Pregnancy subsequent to loss was perceived as a threat, and threat appraisal strongly predicted pregnancy anxiety. Pregnancy anxiety, reported at moderate levels on average, decreased over time; threat appraisal, coping, and other emotions were stable across pregnancy. Coping did not mediate these effects, but relative coping was correlated with emotional status as theorized, with problem-focused coping used more than emotion-focused coping. DISCUSSION: Women find pregnancy after loss stressful and a threat, and this appraisal remains across pregnancy. Because pregnancy anxiety is common, and highest in early pregnancy, providers should address worries and fears with all women early in PAL. Interventions must be tested in future studies.

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Balci Y, Tok M, Kocaturk BK, Yenilmez C, Yirulmaz C.
**Simultaneous sudden infant death syndrome.**

The simultaneous sudden deaths of twins rarely occur and therefore it has received limited attention in the medical literature. When the deaths of the twins meet the defined criteria for sudden infant death syndrome (SIDS) independently and take place within the same 24 h range it can be called as simultaneous SIDS (SSIDS). The case(s): Twin girls
(3.5-month-old) were found dead by their mother in their crib, both in supine position. The infants were identical twins and delivered at a hospital by cesarean section. Both infants were healthy and did not have any serious medical history. Two days prior to the incident, the twins had received the second dose of oral polio, DPT and the first dose of hepatitis B vaccines and they had fever on the first day of the vaccination and been given teaspoonful of acetaminophen. Death scene investigation, judicial investigation, parental assessment, macroscopic and microscopic autopsy findings and the toxicological analysis did not yield any specific cause of death. The case(s) were referred to a supreme board composed of multidisciplinary medical professionals at the Institute of Forensic Medicine, Ministry of Justice, in Istanbul. The Board decided that the available data was consistent with SIDS. These SIDS case(s) are presented because twin SIDS are rare and this is the first time that a simultaneous twin SIDS have been reported in Turkey. Simultaneous SIDS cases have many implications regarding definition, diagnosis and medico-legal approach.

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