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Dipartimento di Scienze Ginecologiche e della Riproduzione Umana
Scuola di Specializzazione in Ginecologia e Ostetricia
Direttore Prof. Giovanni Battista Nardelli

Intra Uterine Fetal Death

Dott.ssa Anna Codroma

CASE REPORT

- V.P., female, aged 31
- Family history: negative for recurrent diseases
- Personal history: negative for allergies, smoking, previous E/P therapy without side effects
- Serology:
 - Toxoplasmosis: IgG -, IgM -
 - Rubella: IgG +, IgM -
 - Cytomegalovirus: IgG -, IgM -
 - Parvovirus B19: IgG -, IgM -
 - Varicella Zoster Virus: IgG +, IgM -
 - HBV, HCV, HIV 1-2 and Lue: -
- Spontaneous and physiologic pregnancy
- I trimester scan: biometry corresponding to amenorrhea
- Ultrascreen: low risk
- II trimester scan: regular morphology and biometry corresponding to amenorrhea
- Repeated serology: unchanged

CASE REPORT

02.07.2012

- Emergency evaluation for decreased fetal movements
- diagnosis of intrauterine late fetal death
- Hospitalization
- Prostaglandins induction of labour
- vaginal delivery and manual placental removal for failure afterbirth

03.07.2012

- No clinical nor biochemical signs of sepsis, preeclampsia, DIC
- Psychological support

04.07.2012

- Discharge in good clinical conditions

CASE REPORT

❖ placental histological examination

DESCRIZIONE MACROSCOPICA

Reperto macroscopico (campione pervenuto fissato in formalina) [SC]:

Materiale inviato in esame come "placenta e membrane" del peso di g 255, di cm 11 x 9, di forma ovale.

Il funicolo (lunghezza cm 12) ha inserzione paracentrale (a cm 2,5 dal margine più vicino) ed appare ipospiralizzato per i primi 4 cm, di colorito beige.

E' presente strozzatura di cm 0,8 posta a cm 5 dall'inserzione.

In sezione sono presenti 3 vasi. La gelatina è color marrone e i vasi sembrano trombizzati.

Le membrane sono in gran parte assenti.

Il versante fetale presenta evidente varice a ridosso del funicolo; i vasi diretti a metà placenta sono dilatati.

Il versante materno presenta metà placenta lacerata.

Si prelevano:

- 1) Funicolo.
- 2) Membrane.
- 3) Inserzione e vasi trombizzati (macrosezione).
- 4,5) Placenta (lobo compatto)
- 6) Placenta (lobo frammentato).

Informazioni cliniche (come segnalate in richiesta):

- Morte endouterina a 30 settimane di gestazione
- U.M.: 04/12/2012
- PARA: 0010
- Ecografia II° livello (02/07/2012): BCF assente

DIAGNOSI

Placenta con trombosi dei vasi del funicolo (1), dei vasi del piatto coriale (3) e di alcuni vasi dei villi staminali (3,4,7) e alterazioni di tipo subischemico di molti villi (3,4,5,6,7).

Membrane senza flogosi di rilievo (2).

Carioressi endovasale e detriti apoptoici multipli dello stroma dei villi (3,4,5,6,7).

Funicolo con spiccate alterazioni di tipo regressivo delle cellule dello stroma e delle fibre della parete dei vasi, collasso trivasale (1).

L'esaminatore: Prof.ssa S. Chiarelli : VE

6 AGO 2012
FD

CASE REPORT

❖ fetal autopsy

DIAGNOSI ANATOMO-PATOLOGICA

Autopsia N. 113/2012 eseguita il 4-07-2012 alle ore 10,00 dal dott. R. Salmaso

Nato morto con fenotipo dei genitali esterni ed interni femminili, del peso di gr 942, della lunghezza cranio-calcanale di cm 37,5, cranio-sacrale 25,5 cm e del piede di cm 5,5.

Esame esterno:

Assenza di malformazioni osteo-scheletriche, macerazioni di III° estese al 90% della superficie corporea con diffuso slaminamento dell'epidermide, presenza di bolle, netto accavallamento delle ossa parietali e modica ipertricosi in corrispondenza delle spalle.

Valutazione macroscopica degli organi interni:

Timo nella norma.

Polmoni congesti con petecchie sub-pleuriche.

Cuore con concordanza atrio-ventricolare e ventricolo-arteriosa, setti interatriale ed interventricolare integri.

Omogeneizzazione cromica della maggior parte degli organi della cavità addominale.

Valutazione istologica:

Ipoplasia timica di III grado.

Occlusione trombotica completa della vena e di una arteria ombelicale e funicolo marcatamente edematoso, la parete delle arterie ombelicali presentano, inoltre, una marcata ipertrofia della tonaca muscolare.

Polmoni in grave ritardo maturativo rispetto alla settimana di gravidanza riferita con angiectasie e congestione.

Sezioni del tratto esofago-gastrico, del piccolo e del grosso intestino nei limiti di norma.

Milza e fegato con congestione diffusa.

Reni congesti, con lieve ritardo maturativo rispetto all'epoca gestazionale, ectasia di calici e pelvi.

Apparato genitale nei limiti di norma.

L'esaminatore Dott. R. Salmaso : /RS



DEFINITION

WHO: "fetal death late in pregnancy"

allows each country to define the gestational age at which a fetal death is considered a stillbirth for reporting purposes

- United States: 20 weeks of gestation as threshold
- International Stillbirth Alliance: 20 weeks
- gestational age unknown: fetal weight threshold used varies from ≥ 350 to ≥ 500 g
- Early stillbirths: 20 to 27 weeks of gestation
- Late stillbirths: >28 weeks of gestation

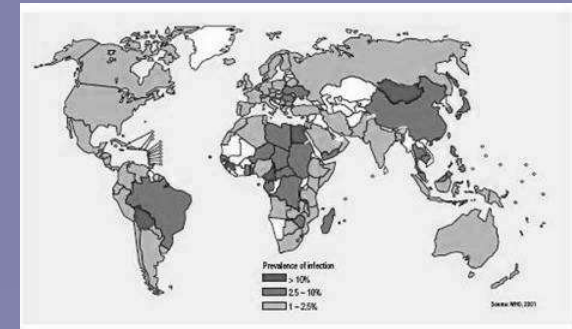
CEMACH (The Perinatal Mortality Surveillance Report), UK:

'a baby delivered with no signs of life known to have died after 24 completed weeks of pregnancy'.

-
- o Confidential Enquiry into Maternal and Child Health (CEMACH). Perinatal Mortality 2007: United Kingdom. CEMACH: London, 2009
 - o World Health Organization. Definitions and indicators in Family Planning Maternal & Child Health and Reproductive Health. Geneva: WHO Press, 2001
 - o www.stillbirthalliance.org

EPIDEMIOLOGY

- 5.2/1000 in UK 2007
- 6.2/1000 in USA 2005
- 9.2/1000 in Italy from 1994 to 2006 (italian women)
- 12.7/1000 in Italy from 1994 to 2006 (non italian women)
- Over 2.6 million stillbirths \geq 28 weeks or 1000 g occur each year worldwide



decreased since 1995 when about 3 million stillbirths were estimated worldwide
generally constant since 2000 maybe for:

- rising obesity rates
- rising maternal age

➔ more prevalent risk factors for stillbirth

estimating problems:

- Developing countries: most births occur at home in very remote areas
- Developed countries: induced labors for fetal anomalies
premature rupture of membrane

➔ data completely lacking

➔ categorized as stillbirth

-
- o Confidential Enquiry into Maternal and Child Health. Perinatal Mortality 2007: United Kingdom. CEMACH: London, 2009
 - o Confidential Enquiry into Maternal and Child Health. Perinatal Mortality 2006: England, Wales and Northern Ireland. CEMACH: London, 2008
 - o Cousens S, Blencowe H, Stanton C, et al. National, regional, and worldwide estimates of stillbirth rates in 2009 with trends since 1995: a systematic analysis. Lancet 2011; 377:1319.
 - o Lawn JE, Blencowe H, Pattinson R, et al. Stillbirths: Where? When? Why? How to make the data count? Lancet 2011; 377:1448.
 - o MacDorman MF, Kirmeyer S. Fetal and perinatal mortality, United States, 2005. Natl Vital Stat Rep 2009; 57:1.
 - o Barbatì A, Fratini D, Cacce MG, Liotta L, Di Renzo GC. Indagine sulle morti fetali endouterine: incidenza e cause riscontrate nel periodo 1994-2006 Riv. It. Ost. Gin. - 2007; 16: 703-06.

DIAGNOSIS

- Auscultation and cardiotocography → should not be used
- Real-time ultrasonography → essential

*Ideally, real-time ultrasonography should be available at all times
A second opinion should be obtained whenever practically possible*

- Mothers should be prepared for the possibility of passive fetal movement

a repeat scan should be offered

- Other secondary features might be seen:

- skull with overlapping bones
- hydrops
- maceration



-
- Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010
 - Fretts RC. Etiology and prevention of stillbirth. Am J Obstet Gynecol 2005; 193: 1923-35.

ETIOLOGY

❖ CONGENITAL ANOMALY

- ❖ chromosomal defects
- ❖ syndromes
- ❖ abnormalities

❖ PLACENTA

- ❖ placental bed pathology
- ❖ development
- ❖ parenchyma
- ❖ localization
- ❖ umbilical cord complications

❖ PREMATUREITY

- ❖ pPROM
- ❖ preterm labour
- ❖ cervical dysfunctions
- ❖ iatrogenic

.. more than 35 different classifications

❖ INFECTIONS

- transplacental
- ascending

❖ MATERNAL

- maternal disease
- maternal trauma

❖ UNKNOWN

ETIOLOGY

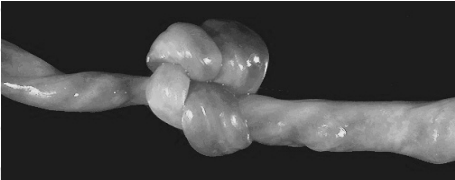
Etiology of fetal death	
Perinatal infection	12.9 % of maternal or fetal infections more frequent in developing countries
Bacterial	
Group B Streptococcus	
E coli	
Listeria monocytogenes	
Spirochaetal	
Other bacterial	
Viral	
Cytomegalovirus	
Parvovirus	
Herpes simplex virus	
Rubella virus	
Other viral	
Protozoal, eg Toxoplasma	
Fungal	
Other specified organism	malaria in endemic areas
Hypertension or preeclampsia	9,2 % of hypertensive disorders
Antepartum hemorrhage	
Placental abruption	10 to 20 %
Placenta previa	
Vasa previa	
Other	
Maternal conditions	
Termination of pregnancy	
Diabetes/gestational diabetes	
Maternal injury	
Accidental	
Non-accidental	
Maternal sepsis	
Systemic lupus erythematosus	
Obstetric cholestasis	
Other	

- o Chan, A, King, JF, Flenady, V, Haslam, RH, Tudehope DI. Classification of perinatal deaths: development of the Australian and New Zealand classifications. J Paediatr Child Health 2004; 40:340

ETIOLOGY



Perinatal conditions	
Twin-twin transfusion	
Fetomaternal hemorrhage	
Antepartum cord complications	10.4 % of umbilical abnormalities
Uterine abnormalities	
Birth trauma	
Alloimmune disease	
Nonimmune fetal hydrops	
Other	
Hypoxic peripartum death	
With intrapartum complications	
Uterine rupture	
Cord prolapse	
Shoulder dystocia	
Other	
Evidence of non-reassuring fetal status in a normally grown infant	
No intrapartum complications and no evidence of non-reassuring fetal status.	
Fetal growth restriction	SECOND MOST COMMON TYPE
Unspecified or not known whether placenta examined	
Spontaneous preterm birth	
Intact membranes	
Ruptured membranes	
Unexplained antepartum death	FIRST MOST COMMON TYPE (25 to 60 %)
With evidence of reduced vascular perfusion on Doppler studies and/or placental histopathology (eg significant infarction, acute atherosclerosis, maternal and/or fetal vascular thrombosis or maternal floor infarction)	
With chronic villitis	23.6 % of placental disease
No placental pathology	
Other specified placental pathology	



o Chan, A, King, JF, Flenady, V, Haslam, RH, Tudehope DI. Classification of perinatal deaths: development of the Australian and New Zealand classifications. J Paediatr Child Health 2004; 40:340

MANAGEMENT

Test	Reason(s) for test	Evidence level	Reference(s)	Additional comments
Maternal standard haematology and biochemistry including CRPs and bile salt	Pre-eclampsia and its complications Multi-organ failure in sepsis or haemorrhage Obstetric cholestasis	3	3, 19, 42	Platelet count to test for occult DIC (repeat twice weekly)
Maternal coagulation times and plasma fibrinogen	DIC	3	19	Not a test for cause of late IUFD Maternal sepsis, placental abruption and pre-eclampsia increase the probability of DIC Especially important if woman desires regional anaesthesia
Maternal thrombophilia screen	Maternal thrombophilia	1++	56–58	Indicated if evidence of fetal growth restriction or placental disease The association between inherited thrombophilias and IUFD is weak, and management in future pregnancy is uncertain ^{56,58} Most tests are not affected by pregnancy – if abnormal, repeat at 6 weeks Antiphospholipid screen repeated if abnormal



- o Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010

MANAGEMENT

Maternal random blood glucose	Occult maternal diabetes mellitus	3	49, 50	<p>Rarely a woman will have incidental type 1 diabetes mellitus, usually with severe ketosis</p> <p>Women with gestational diabetes mellitus return to normal glucose tolerance within a few hours after late IUFD has occurred</p>
Maternal HbA _{1c}	Gestational diabetes mellitus	2+	3, 4, 51–53	<p>Most women with gestational diabetes mellitus have a normal HbA_{1c}</p> <p>Need to test for gestational diabetes mellitus in future pregnancy</p> <p>Might also indicate occult type 1 and type 2 diabetes</p>
Maternal thyroid function	Occult maternal thyroid disease	3	54, 55	TSH, FT4 and FT3
Anti-red cell antibody serology	Immune haemolytic disease	3	59–62	Indicated if fetal hydrops evident clinically or on postmortem
Maternal anti-Ro and anti-La antibodies	Occult maternal autoimmune disease	3	63	Indicated if evidence of hydrops, endomyocardial fibro-elastosis or AV node calcification at postmortem
Maternal alloimmune antiplatelet antibodies	Alloimmune thrombocytopenia	3	64	Indicated if fetal intracranial haemorrhage found on postmortem

o Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010

MANAGEMENT

Maternal bacteriology:

- blood cultures
- midstream urine
- vaginal swabs
- cervical swabs

Suspected maternal bacterial infection including *Listeria monocytogenes* and *Chlamydia* spp.

1++

32–34, 39
41, 44, 45

Indicated in the presence of:

- maternal fever
- flu-like symptoms
- abnormal liquor (purulent appearance/offensive odour)
- prolonged ruptured membranes before late IUFD

Abnormal bacteriology is of doubtful significance in the absence of clinical or histological evidence of chorioamnionitis⁴⁶ (Evidence level 3)

In one study, amniotic fluid culture was positive in only 1 of 44 women with IUFD despite evidence of chorioamnionitis in a further 9 women⁴⁷ (Evidence level 3)

Also used to direct maternal antibiotic therapy

Maternal serology:

- viral screen
- syphilis
- tropical infections

Occult maternal–fetal infection

2+

30, 32–35,
48

Stored serum from booking tests can provide baseline serology

Parvovirus B19, rubella (if nonimmune at booking), CMV, herpes simplex and *Toxoplasma gondii* (routinely)

Hydrops not necessarily a feature of parvovirus-related late IUFD

Treponemal serology – usually known already

Others if presentation suggestive, e.g. travel to endemic areas

o Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010

MANAGEMENT

Parental bloods for karyotype	Parental balanced translocation Parental mosaicism	3	65–67	Indicated if: <ul style="list-style-type: none"> ● fetal unbalanced translocation ● other fetal aneuploidy, e.g. 45X (Turner syndrome) ● fetal genetic testing fails and history suggestive of aneuploidy (fetal abnormality on postmortem, previous unexplained IUFD, recurrent miscarriage)
Maternal urine for cocaine metabolites	Occult drug use	1++	68	With consent, if history and/or presentation are suggestive
Fetal and placental: microbiology <ul style="list-style-type: none"> ● fetal blood ● fetal swabs ● placental swabs 	Fetal infections	2+ 3	33, 34, 69	More informative than maternal serology for detecting viral infections <ul style="list-style-type: none"> Cord or cardiac blood (if possible) in lithium heparin Written consent advisable for cardiac bloods Need to be obtained using clean technique

o Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010

POSTMORTEM EVALUATION

<p>Fetal and placental tissues for karyotype (and possible single-gene testing):</p> <ul style="list-style-type: none"> ● deep fetal skin ● fetal cartilage ● placenta 	<p>Aneuploidy Single gene disorders See section 5.4 on sexing</p>	<p>2+</p>	<p>70-74</p>	<p>Absolutely contraindicated if parents do not wish (written consent essential)</p> <p>Send several specimens – cell cultures might fail</p> <p>Culture bottles must be kept on labour ward in a refrigerator – stored separately from formalin preservation bottles</p> <p>Genetic material should be stored if a single-gene syndrome is suspected</p>
<p>Postmortem examination:</p> <ul style="list-style-type: none"> ● external ● autopsy ● microscopy ● X-ray ● placenta and cord 	<p>See section 5.6</p>	<p>3, 4, 75, 76</p>	<p>Absolutely contraindicated if parents do not wish (written consent essential)</p> <p>External examination should include weight and length measurement</p> <p>IUGR is a significant association for late IUFD</p>	

- ❖ Postmortem examination has the highest diagnostic yield of all investigations
- ❖ in 88% a major contributor to death was found in the placentas
- ❖ MRI loose essential information in 17% of perinatal deaths
- ❖ genetic sex can be tested rapidly on skin or placental tissue
- ❖ QF-PCR with Y markers can provide a highly accurate result within 2 days in more than 99.9% of samples

-
- o Royal College of Obstetricians and Gynaecologists and Royal College of Pathologists. Fetal and perinatal pathology. Report of a Joint Working Party. London: RCOG Press; 2001
 - o Kidron D, Bernheim J, Aviram R. Placental findings contributing to fetal death, a study of 120 stillbirths between 23 and 40 weeks gestation. Placenta 2009;30:700-4.
 - o Cohen MC, Paley MN, Griffiths PD, Whitby EH. Less invasive autopsy: benefits and limitations of the use of magnetic resonance imaging in the perinatal postmortem. Pediatr Dev Pathol 2008;11:1-9.

MANAGEMENT

- Anti-RhD gammaglobulin as soon as possible
- Written consents must be obtained
- Recommendations about labour and birth :
 - medical condition
 - previous intrapartum history
 - mother's preferences



- ❖ > 85% of women labour spontaneously within three weeks
- ❖ the risk of expectant management for 48 hours is low
- ❖ 10% chance of maternal DIC within 4 weeks, increasing chance thereafter

o National Institute for Health and Clinical Excellence. Clinical guideline no. 70: Induction of labour. London: National Institute for Health and Clinical Excellence; 2008

o Silver RM. Fetal death. *Obstet Gynecol* 2007;109:153-67.

MANAGEMENT

ASSESS MATERNAL WELLBEING

ACTIVE MANAGEMENT

- pre-eclampsia
- sepsis
- placental abruption
- membrane rupture



Delivery and
management

EXPECTANT MANAGEMENT

- no risk factors



DIC twice weekly

- ❖ value of postmortem may be reduced
- ❖ the appearance of the baby may deteriorate
- ❖ psychological aspects

MANAGEMENT

- ❖ vaginal birth can be achieved within 24 hours in about 90% of women
- ❖ The implications of caesarean delivery for future childbearing should be discussed

UNSCARRED UTERUS

- prostaglandins +/- Mifepristone
- vaginal misoprostol
- Oxytocin in third trimester
- Mechanical methods (trials only)

SCARRED UTERUS

- higher risk with prostaglandins
- SOGC: misoprostol is contraindicated
- No studies on two caesarean sections or atypical uterine scar

NO Fetal heart rate abnormality



- atypical pain
- vaginal bleeding
- haematuria on catheter specimen
- maternal collapse

-
- Wagaarachchi PT, Ashok PW, Narvekar NN, Smith NC, Templeton A. Medical management of late intrauterine death using a combination of mifepristone and misoprostol. *BJOG* 2002;109:443-7.
 - National Collaborating Centre for Women's and Children's Health. Clinical guideline: Caesarean section. London: RCOG Press; 2004
 - Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 45: Birth after previous caesarean birth. London: RCOG; 2007
 - Society of Obstetricians and Gynaecologists of Canada. SOGC clinical practice guidelines. Guidelines for vaginal birth after previous caesarean birth. Number 155 (Replaces guideline number 147), February 2005

MANAGEMENT

ANTIBIOTIC PROPHYLAXIS:



- ❖ no need for prophylaxis (RCOG)
- ❖ sepsis should be treated with intravenous broad-spectrum antibiotic therapy (including antichlamydial agents)
- ❖ 3.1% develop signs of sepsis during induction of labour

LABOUR ANALGESIA:

- ❖ Diamorphine should be preferred to pethidine
- ❖ Regional anaesthesia should be available
- ❖ Assessment for DIC and sepsis should be undertaken before regional anaesthesia
- ❖ Women should be offered an opportunity to meet with an obstetric anaesthetist

-
- o Wagaarachchi PT, Ashok PW, Narvekar NN, Smith NC, Templeton A. Medical management of late intrauterine death using a combination of mifepristone and misoprostol. *BJOG* 2002;109:443-7
 - o Royal College of Obstetricians and Gynaecologists. Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth; London: RCOG; 2010

MANAGEMENT

■ TROMBOPROPHILAXIS

- ❖ routine thromboprophylaxis
- ❖ DIC therapy (discuss with haematologist)



■ SUPPRESSION OF LACTATION

- ❖ dopamine agonists are effective and well tolerated
- ❖ cabergoline is superior to bromocriptine
- ❖ contraindicated in hypertension or pre-eclampsia

■ FERTILITY

- ❖ ovulation returns quickly, as early as day 18
- ❖ aware that it is possible to conceive before the first menstrual period

-
- Single dose cabergoline versus bromocriptine in inhibition of puerperal lactation: randomised, double blind, multicentre study. European Multicentre Study Group for Cabergoline in Lactation Inhibition. *BMJ* 1991;302:1367-71.
 - British Medical Association and Royal Pharmaceutical Society of Great Britain. *British National Formulary (BNF) 54*. London: BMJ Publishing Group Ltd and RPS Publishing; 2007
 - Royal College of Obstetricians and Gynaecologists. *Green-top Guideline No. 55 Late Intrauterine fetal death and stillbirth*; London: RCOG; 2010

FOLLOW UP

- timing of the first appointment: 6 to 8 weeks (placental and postmortem available)
- explanation of death, when possible
- offered general prepregnancy advice
- Inform about risk of recurrence:

- 12-fold increased risk of intrapartum stillbirth
- greater risk of subsequent early IUFDs between 20 and 28 weeks

- No association between inter-pregnancy interval and pregnancy outcome



parents find very distressing to return where their baby was stillborn

-
- Getahun D, Lawrence JM, Fassett MJ, Strickland D, Koebnick C, Chen W, et al. The association between stillbirth in the first pregnancy and subsequent adverse perinatal outcomes. *Am J Obstet Gynecol* 2009;201:378.e1-6
 - Davanzo J, Hale L, Razzaque A, Rahman M. Effects of interpregnancy interval and outcome of the preceding pregnancy on pregnancy outcomes in Matlab, Bangladesh. *JOG* 2007;114:1079-87
 - Sharma PP, Salihu HM, Kirby RS. Stillbirth recurrence in a population of relatively low-risk mothers. *Paediatr Perinat Epidemiol* 2007;21 Suppl 1:24-30
 - Gold KJ, Sen A, Hayward RA. Marriage and cohabitation outcomes after pregnancy loss. *Pediatrics* 2010;125:e1202-7

PREVENTION

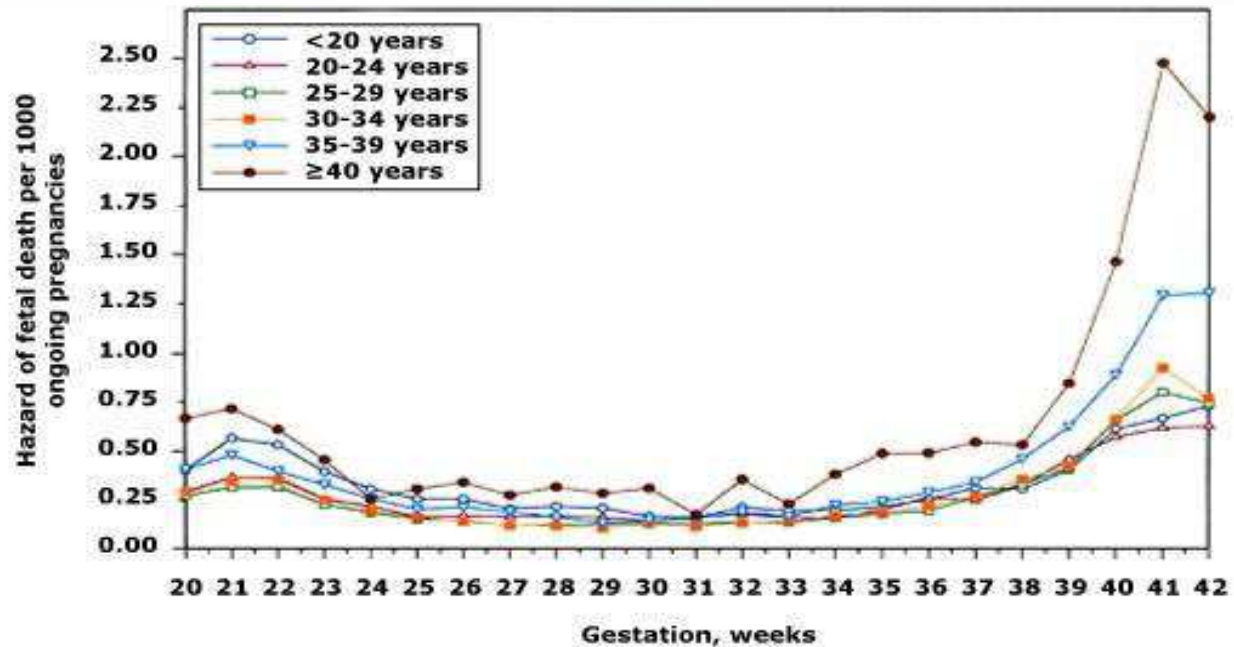
- Periconceptional folic acid fortification
- Smoking cessation, reduce alcohol intake and recreational drugs
- Weight reduction
- Hypertensive disorders of pregnancy detection and management
- Diabetes of pregnancy detection and management
- Fetal growth restriction detection and management
- Postterm pregnancy (≥ 41 weeks of gestation) identification and induction
- Skilled birth attendant at birth
- Availability of emergency obstetric care
- Syphilis detection and treatment
- Prevention of malaria
- reduction of multiple pregnancies
- avoid delayed childbearing
- evaluation of decreased fetal movements

- never wait longer than two hours if there is absent fetal movements
- call within 12 hours if decreased fetal movements

-
- www.stillbirthalliance.org
 - Reddy UM. Prediction and prevention of recurrent stillbirth. *Obstet Gynecol* 2007; 110:1151.
 - Bhutta ZA, Yakoob MY, Lawn JE, et al. Stillbirths: what difference can we make and at what cost? *Lancet* 2011; 377:1523.
 - Richardus JH, Graafmans WC, Verloove-vanhorick SP, et al. Differences in perinatal mortality and suboptimal care between 10 European regions: results of an international audit. *BJOG* 2003; 110:97.

PREVENTION

Hazard (risk) of stillbirth for singleton births without congenital anomalies by maternal age and gestational age, 2001-2002



Older women experience an increased risk of stillbirth at all gestational ages, and this risk is magnified at term.

Reproduced with permission from: Reddy, UM, KO, CW, Willinger, M. Maternal age and the risk of stillbirth throughout pregnancy in the United States. *Am J Obstet Gynecol* 2006; 195:764. Copyright ©2006 Elsevier.

PSYCHOLOGICAL AND SOCIAL ASPECTS OF CARE..



...ABOUT FUTURE PREGNANCIES:

- ❖ delaying conception until severe psychological issues have been resolved
- ❖ unresolved normal grief responses can evolve into post-traumatic stress disorder
- ❖ Women with poor social support are particularly vulnerable
- ❖ aware about subsequent postpartum depression
- ❖ maternal bonding can be adversely affected



-
- o Turton P, Hughes P, Evans CD, Fainman D. Incidence, correlates and predictors of post-traumatic stress disorder in the pregnancy after stillbirth. *Br J Psychiatry* 2001;178:556-60.
 - o Badenhorst W, Hughes P. Psychological aspects of perinatal loss. *Best Pract Res Clin Obstet Gynaecol* 2007;21:249-59

PSYCHOLOGICAL AND SOCIAL ASPECTS OF CARE..



- ❖ call a fetal loss 'stillbirth' is important because
less grief support is provided after a miscarriage
- ❖ stillbirth often has profound *emotional, psychiatric and social effects*
 - If the woman is unaccompanied, immediate offer to call her partner, relatives or friends
 - do not care for women with symptoms of psychiatric disease in isolation
 - imposing care can worsen the psychological impact:
discussions should aim to support maternal/parental choice
 - If a woman returns home before labour: offer a 24-hour contact number
 - Parents should be offered written information to supplement discussions

-
- o Lalor JG, Begley CM, Devane D. Exploring painful experiences: impact of emotional narratives on members of a qualitative research team. *J Adv Nurs* 2006;56:607-16.
 - o McCreight BS. Perinatal loss: a qualitative study in Northern Ireland. *Omega (Westport)* 2008;57:1-19.
 - o Hughes P, Turton P, Hopper E, Evans CD. Assessment of guidelines for good practice in psychosocial care of mothers after stillbirth: a cohort study. *Lancet* 2002;360:114-8.

PSYCHOLOGICAL AND SOCIAL ASPECTS OF CARE..

- ❖ offer a description of what happens during the procedure and the likely appearance of the baby afterwards
- ❖ advise about the potential difficulty in sexing the baby (extreme prematurity, maceration and hydrops)
- ❖ Maternity units should have the facilities for producing photographs, palm and foot prints



offer of a leaflet including:

- ✓ named carers
- ✓ local contact points
- ✓ postmortem (nature, benefits and choice)
- ✓ baby's arrangements for transport with dignity
- ✓ expectations for physical recovery
- ✓ lactation suppression
- ✓ registering the birth and addresses of local authority site
- ✓ details of national and local parent support groups
- ✓ guidance on fertility and contraception
- ✓ plan for follow-up

PSYCHOLOGICAL AND SOCIAL ASPECTS OF CARE..

..needs for:

- ❖ debriefing for carers
- ❖ dedicated associations
- ❖ passing ceremonies



..thanks