



A.G.E.O.

ASSOCIAZIONE GINECOLOGI EXTRA OSPEDALIERI

3° CORSO DI AGGIORNAMENTO IN
GINECOLOGIA E OSTETRICIA

BOLOGNA 22-23 NOVEMBRE 2019

Presidente del Corso: *Claudio Zanardi*



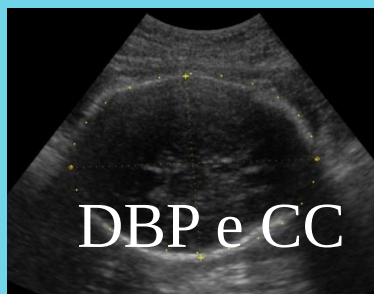
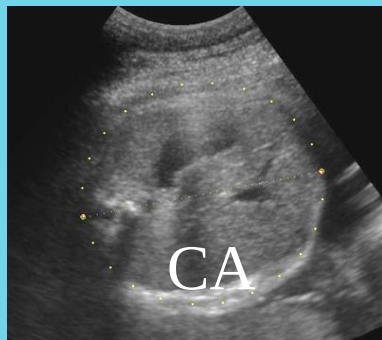
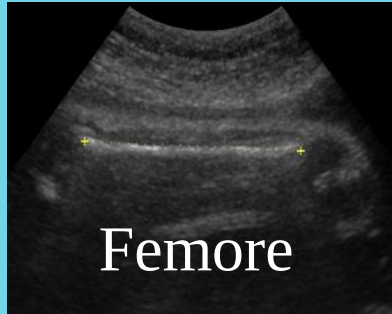
Quando è
necessaria
l'ecografia nel 3°
trimestre?

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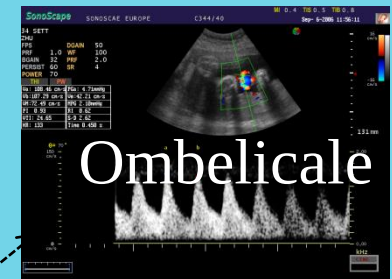
Ecografia nel 3° trimestre: cosa valutare?

Biometria



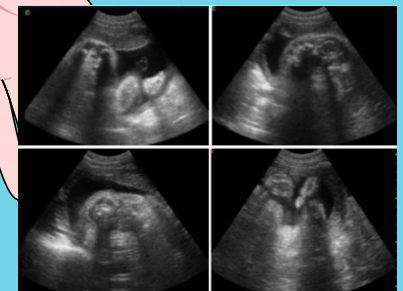
Stima del peso (EFW)

Flussimetria



Placenta

Liquido amniotico



Morfologia fetale

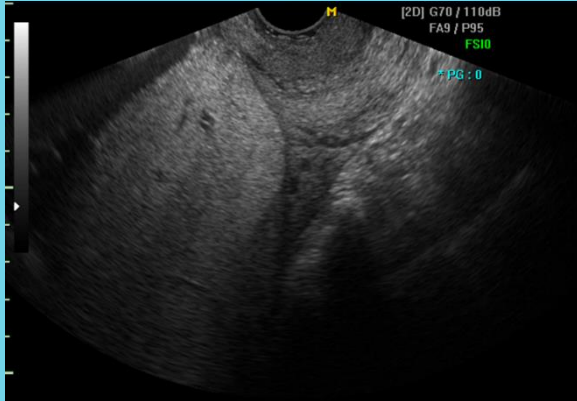
Presentazione

Campi di impiego dell'ecografia nel 3° trimestre

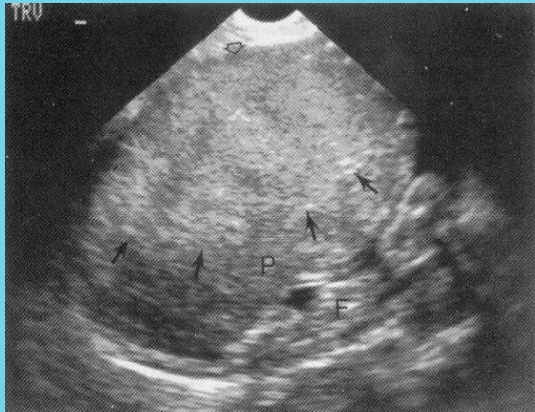
- Supporto diagnostico a problemi clinici
- Monitoraggio delle condizioni fetali in gravidanze a rischio
- Screening fetale in gravidanze a basso rischio (?)

Alcune situazioni cliniche

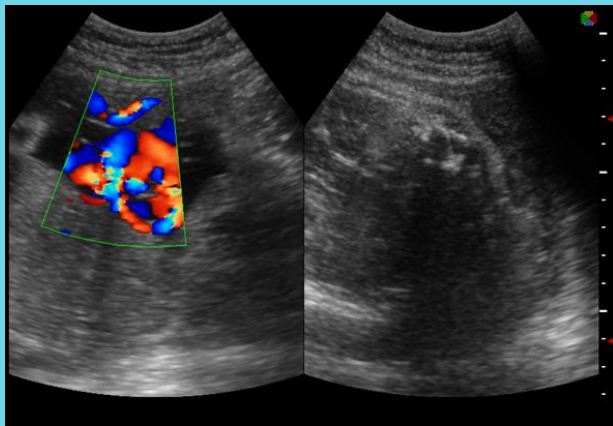
Sanguinamento da
placenta previa



Emorragia da
distacco di placenta



Oligoidramnios
dopo PROM



ALLEGATO 10B

PRESTAZIONI SPECIALISTICHE PER IL CONTROLLO DELLA GRAVIDANZA FISIOLÓGICA, ESCLUSE DALLA PARTECIPAZIONE AL COSTO

Nel TERZO TRIMESTRE:

da 28 settimane + 0gg. a 32 settimane + 6gg.:

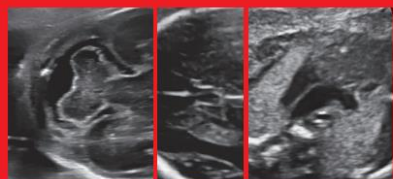
90.62.2	EMOCROMO: ESAME CITOMETRICO E CONTEGGIO LEUCOCITARIO DIFFERENZIALE Hb, GR, GB, HCT, PLT, IND. DERIV. Compreso eventuale controllo microscopico
90.49.2	ANTICORPI ANTILEUCOCITARI [Test di Coombs indiretto]

ECOGRAFIA OSTETRICA.
Solo in caso di patologia fetale e/o annessiale o materna

88.78	ECOGRAFIA OSTETRICA. <i>Solo in caso di patologia fetale e/o annessiale o materna</i>
91.49.2	PRELIEVO DI SANGUE VENOSO

da 41 settimane + 0gg.:

ECOGRAFIA OSTETRICA
per valutazione quantitativa del liquido amniotico

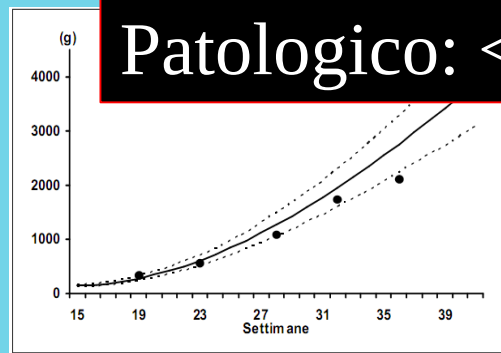
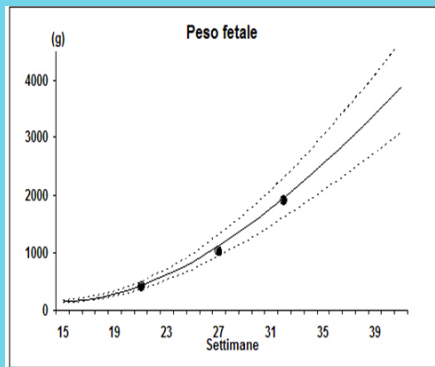


2. Indicazioni all'esame ecografico nel terzo trimestre

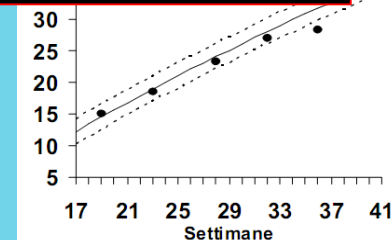
- 2.1 Rischio anamnestico o attuale di patologia della crescita fetale o gravidanza plurima (Evidenza III. Livello di raccomandazione B). Sono fattori di rischio:
- Valutazione clinica di un utero di dimensioni maggiori o minori rispetto all'epoca gestazionale.
 - Ipertensione cronica o gestazionale.
 - Diabete pre-esistente la gravidanza o diabete gestazionale.
 - Malattie renali croniche.
 - Sindrome da anticorpi antifosfolipidi.
 - Precedente figlio SGA.
 - Precedente morte endouterina.
 - Età materna superiore a 40 anni.
 - Body Mass Index <15 o >30 .
 - Gravidanza da tecniche di fecondazione assistita.
 - Fumo superiore a 10 sigarette al giorno.
 - Abuso di sostanze (cocaina, alcol).

Gravidanza a rischio: cosa valutare con l'ecografia

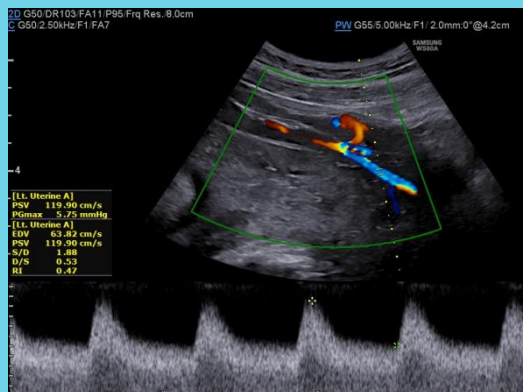
Peso fetale o circonferenza addominale



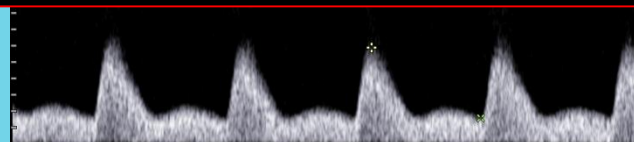
Patologico: $<10^\circ$ o $>90^\circ$



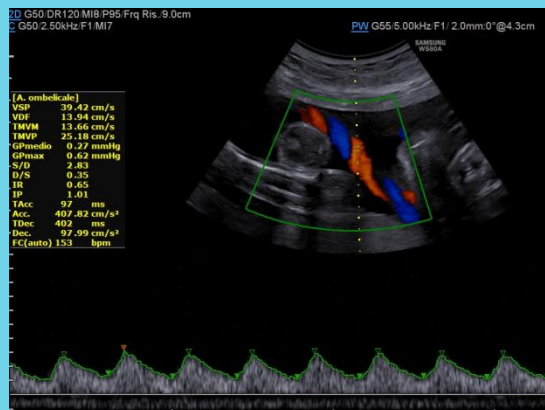
**Doppler
arterie
uterine**



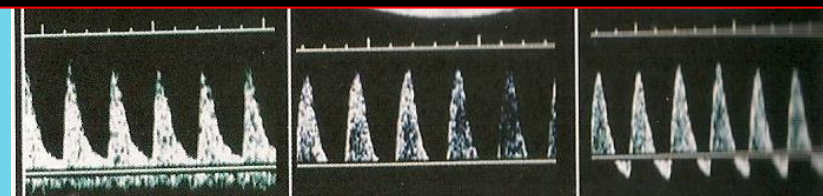
**Patologico: aumento RI
(>60) e incisura
telesistolica**



**Doppler
arteria
ombelicale**



**Patologico: aumento PI e
riduzione flusso diastolico**



Third-trimester ultrasound in low and high-risk women

Country	United Kingdom	New Zealand	Canada	Ireland	United States	France
Screening w routine third trimester ult in low-risk v						t 32 wk
Criteria for s scanning	monitoring, abnormal uterine artery Doppler (including	height monitoring; gestation to start			unsuitable for fundal height monitoring	
Recommend biometry ch						rench ound
Umbilical artery Doppler?	Yes—from 26—28 wk in high	If fetus small on	If fetus small on	Yes—criteria not	Yes—criteria not	Yes—criteria not
Interval be scans in su SGA/FGR						
AC, abdomina						

Scansioni seriate se presenti fattori di rischio e impossibilità di eseguire la misura sinfisi-fondo

Doppler ombelicale se feto piccolo o con ridotta crescita

Intervallo tra scansioni in caso di SGA/FGR:
2-4 settimane

Le linee guida di molti paesi non consigliano l'ecografia di routine nel 3° trimestre nelle gravidanze a basso rischio



Routine ultrasound in late pregnancy (after 24 weeks' gestation) (Review)

Bricker L, Medley N, Pratt JJ

Authors' conclusions

Based on existing evidence, routine late pregnancy ultrasound in low-risk or unselected populations does not confer benefit on mother or baby. There was no difference in the primary outcomes of perinatal mortality, preterm birth less than 37 weeks, caesarean section rates, and induction of labour rates if ultrasound in late pregnancy was performed routinely versus not performed routinely. Meanwhile, data were lacking for the other primary outcomes: preterm birth less than 34 weeks, maternal psychological effects, and neurodevelopment at age two, reflecting a paucity of research covering these outcomes. These outcomes may warrant future research.

Table 2. Obstetric management and neonatal outcomes by suspicion and small for gestational age (SGA) status: entire sample

	SGA		Non-SGA		<i>P</i>
	True positives % aRR** [95% CI]	False negatives % aRR [95% CI]	False positives % aRR [95% CI]	True negatives % aRR [95% CI]	
Total (n)	265	954	271	12 610	
Obstetric management					
Caesarean section	36.3 2.5 [2.0–3.2]	22.2 1.6 [1.3–1.9]	35.3 2.0 [1.6–2.5]	19.1 Ref	<0.001
Pre-labour caesarean	23.8 3.1 [2.2–4.3]	9.4 1.4 [1.1–1.9]	28.4 2.9 [2.2–3.9]	10.0 Ref	<0.001
Caesarean after onset of labour	16.1 2.4 [1.6–3.6]	13.9 1.9 [1.5–2.4]	9.4 1.2 [0.7–1.9]	10.0 Ref	<0.001
Provider-initiated delivery <37 weeks	21.1 6.1 [3.8–9.8]	2.8 1.1 [0.6–1.9]	22.1 4.6 [3.2–6.7]	2.1 Ref	<0.001
Provider-initiated delivery <39 weeks	44.1 4.1 [3.2–5.4]	7.9 0.8 [0.6–1.2]	40.6 3.0 [2.4–3.8]	10.7 Ref	<0.001
Neonatal outcomes					
Late fetal death, <i>n</i> (%)***	2 (0.8)	7 (0.7)	4 (1.5)	20 (0.2)	<0.001*
Preterm birth (<37 weeks)	23.4 4.7 [3.2–6.8]	3.9 0.9 [0.6–1.5]	28.9 3.2 [2.4–4.3]	5.0 Ref	<0.001
Apgar score <7 at 5 minutes	3.1 2.1 [0.6–7.9]	2.0 1.8 [0.7–4.3]	2.3 2.2 [0.8–6.3]	0.8 Ref	<0.001*
Resuscitation	6.4 3.0 [1.4–6.3]	1.6 1.0 [0.5–2.1]	7.9 3.8 [2.1–6.8]	1.2 Ref	<0.001
Admission to a neonatal unit	40.5 5.6 [4.2–7.6]	10.1 1.7 [1.3–2.2]	26.7 2.8 [2.1–3.8]	6.7 Ref	<0.001



E' proprio giusto
eliminare lo
screening del 3°
trimestre?

Spunti di riflessione

➤ Lo studio della Cochrane si basa su lavori non aggiornati



Description of studies

Ultrasound examination options differed between trials, with some offering no routine scans at any time in pregnancy to the control group, some offering routine scans to all participants earlier in pregnancy (before 24 weeks' gestation), and some offering routine scan at all stages of the trial, but only revealing results of late pregnancy ultrasound (after 24 weeks' gestation) for the study groups.

Routine ultrasound at gestation)

Four trials (Alesund 1999 (Norway); Belanger 1996 (USA); RADIUS 1993 (USA); Trondheim 1984 (Norway)), offered routine ultrasound in the second and third trimesters versus selective ultrasound. In two trials (New Zealand 1993; Skrastad 2013 (Nor-

detail, detection of fetal abnormalities at routine third trimester ultrasound scan. The Perth 1993 (Australia) trial combined repeated ultrasound scan for fetal biometry and amniotic fluid assessment with Doppler ultrasound, and the data were therefore analysed in a separate comparison (serial ultrasound and Doppler ultrasound versus selective ultrasound), and were also included in another Cochrane review entitled 'Fetal and umbilical Doppler ul-

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sound scans, and only the study group was offered serial ultrasound screening thereafter. In the Wladimiroff 1980 trial, all women underwent routine antenatal care, then only the study group was offered a single ultrasound to assess fetal chest area at 32 to 36 weeks.

The trials evaluated different aspects of third trimester ultrasound. Three trials (Glasgow 1984 (UK); New Zealand 1993; Wladimiroff 1980), addressed ultrasound screening for 'small for dates'. The Peterborough 1987 (UK) trial addressed the value of placental grading as an adjunct to routine third trimester ultrasound scan. The Belfast 2003 trial examined the impact of two third trimester scans which assessed liquor volume, fetal weight and placental maturity. The Skrastad 2013 trial assessed the impact of one third trimester scan which assessed fetal anatomy. The RADIUS 1993 (USA) trial was the only study that reported in

Punti di riflessione

- Lo studio della Cochrane si basa su lavori non aggiornati
- L'ecografia non è solo biometria

Malformazioni fetali a più frequente comparsa nel III trimestre e non diagnosticabili durante l'esame di screening del II trimestre

Sistema Nervoso Centrale

Microcefalia

Ventricolomegalia ad insorgenza tardiva

Ipoplasia del corpo calloso

Cuore torace

Idrotorace

Stenosi valvolari aortiche e polmonari

Coartazione aortica

Forme ad esordio tardivo di cuore sinistro ipoplasico e sue varianti

Ernie diaframmatiche con erniazione tardiva dei visceri addominali

Addome

Patologia Ostruttiva Intestinale

Idronefrosi ad insorgenza tardiva

Displasie renali ad insorgenza tardiva

Arti

Displasie scheletriche ad insorgenza tardiva

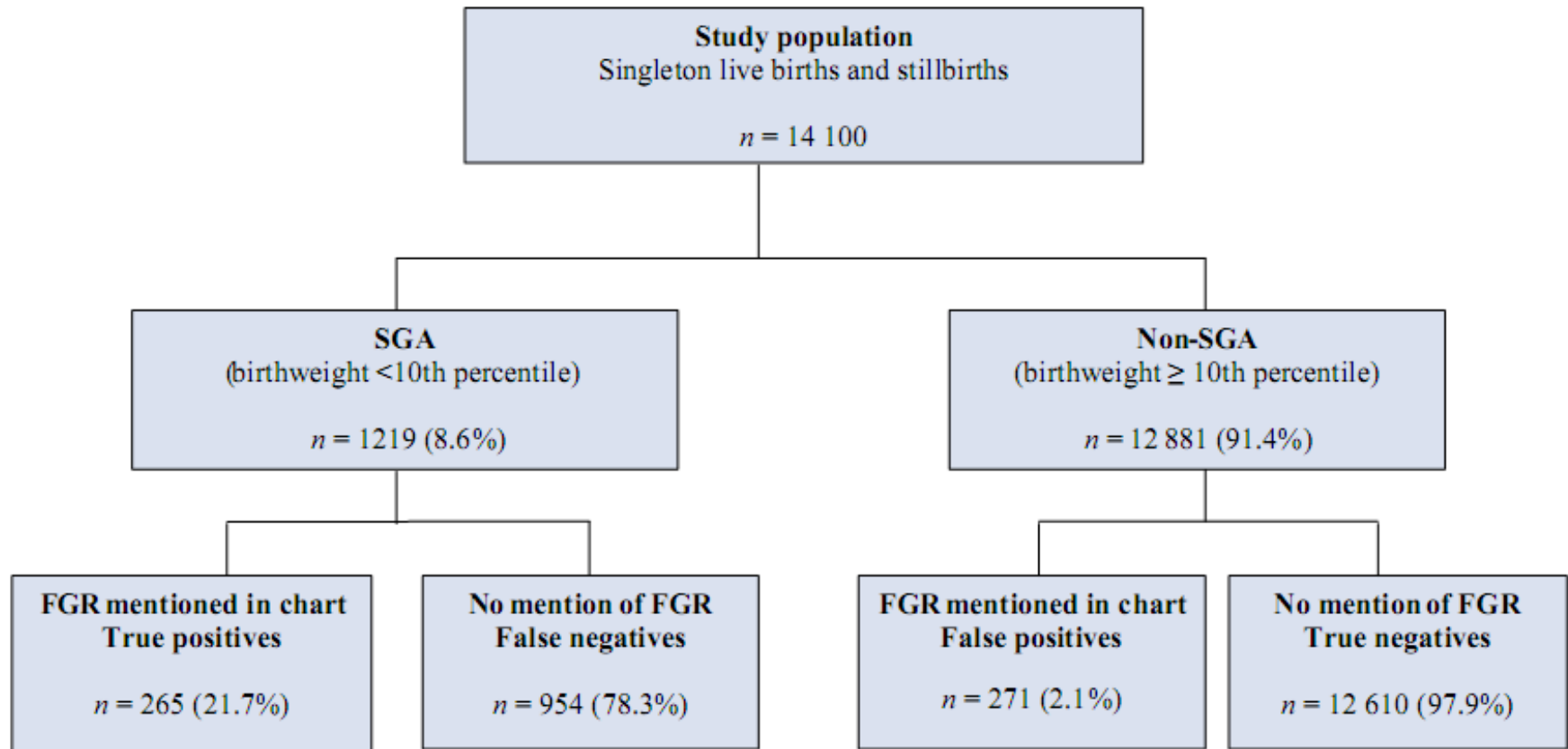
Alcune forme di piede torto

Da linee guida
SIEOG, 2015

Punti di riflessione

- Lo studio della Cochrane si basa su lavori non aggiornati
- L'ecografia non è solo biometria
- La stima ecografica del peso fetale ha un margine di errore di almeno il 10-15%
- SGA ($< 10^{\circ}$ pc) non sempre = FGR

SGA e FGR in una casistica ecografica



Punti di riflessione

- Lo studio della Cochrane si basa su lavori non aggiornati
- L'ecografia non è solo biometria
- La stima ecografica del peso fetale ha un margine di errore di almeno il 10-15%
- SGA ($< 10^{\circ}$ pc) non sempre = FGR
- Una alterazione della crescita fetale può insorgere in diversi momenti della gravidanza

Diagnosis and surveillance of late-onset fetal growth restriction

Francesc Figueras, PhD; Javier Caradeux, MD; Fatima Crispi, MD; Elisenda Eixarch, MD; Anna Peguero, MD; Eduard Gratacos, PhD

American Journal of Obstetrics & Gynecology FEBRUARY 2018

Late FGR=
> 32 sett.

Main differential features between both clinical phenotypes of fetal growth restriction

	Early FGR	Late FGR
Prevalence ⁷	0.5–1%	5–10%
Challenge ¹⁰	Management (gestational age at delivery)	Detection and diagnosis
Evidence of placental disease ^{1,7,a}	High 70% Abnormal umbilical Doppler 60% Association with preeclampsia Severe angiogenic disbalance	Low <10% Abnormal umbilical Doppler 15% Association with preeclampsia Mild angiogenic disbalance
Pathophysiology and oxygen delivered to brain ⁶	Hypoxia +/+ Systemic cardiovascular adaptation	Hypoxia +/- Central cardiovascular adaptation
Clinical impact ¹⁰	High mortality and morbidity	Low mortality/morbidity + high prevalence = large etiological fraction of adverse outcomes

FGR, fetal growth restriction.

Screening for fetal growth restriction with universal third trimester ultrasonography in nulliparous women in the Pregnancy Outcome Prediction (POP) study: a prospective cohort study

Ulla Sovio, Ian R White, Alison Dacey, Dharmintra Pasupathy, Gordon C S Smith

Lancet 2015; 386: 2089-97

Methods The Pregnancy Outcome Prediction (POP) study was a prospective cohort study of nulliparous women with

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Interpretation

Our study shows that universal use of ultrasound roughly tripled the detection of SGA infants. Moreover, by use of a combination of assessment of the estimated fetal weight of a baby with a previously reported measurement of fetal growth restriction (abdominal circumference growth velocity), the population of small fetuses could be divided into about 30% that were growth restricted and at increased risk of neonatal morbidity, and about 70% that did not have growth restriction and were at the same risk of neonatal morbidity as those babies not identified as small by universal ultrasound.

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Routine ultrasound at 32 *vs* 36 weeks' gestation: prediction of small-for-gestational-age neonates

A. CIOBANU¹, N. KHAN^{2,3}, A. SYNGELAKI¹ , R. AKOLEKAR^{2,3#}  and K. H. NICOLAIDES^{1#}

¹Fetal Medicine Research Institute, King's College Hospital, London, UK; ²Fetal Medicine Unit, Medway Maritime Hospital, Gillingham, UK; ³Institute of Medical Sciences, Canterbury Christ Church University, Chatham, UK

Conclusions *The predictive performance for a SGA neonate of routine ultrasonographic examination during the third trimester is higher if, first, the scan is carried out at 35 + 0 to 36 + 6 weeks' gestation than at 31 + 0 to 33 + 6 weeks, second, the method of screening is EFW than fetal AC, third, the outcome measure is birth weight < 3rd than < 10th percentile, and, fourth, if delivery occurs within 2 weeks than at any stage after assessment. Prediction of a SGA neonate by EFW < 10th percentile is modest and prediction of > 85% of cases at 35 + 0 to 36 + 6 weeks' gestation necessitates use of EFW < 40th percentile. Copyright © 2019 ISUOG. Published by John*



GUIDELINES

Late FGR:

GA $\geq$ 32 weeks, in absence of congenital anomalies

AC/EFW $<$ 3rd centile

Or at least two out of three of the following

- 1. AC/EFW $<$ 10th centile*
- 2. AC/EFW crossing centiles $>$ 2 quartiles on growth centiles**
- 3. CPR $<$ 5th centile or UA-PI $>$ 95th centile*

*Growth centiles are non-customized centiles. AC, fetal abdominal circumference; AEDF, absent end-diastolic flow; CPR, cerebroplacental ratio; EFW, estimated fetal weight; GA, gestational age; PI, pulsatility index; UA, umbilical artery; UtA, uterine artery. Reproduced from Gordijn *et al.*⁵.

Conclusioni

- L'ecografia del terzo trimestre ha ancora la sua importanza come supporto all'attività ostetrica
- Se si esegue un solo esame di screening, è opportuno spostare l'epoca dalla 32° alla 36° settimana
- Controlli seriatì sono preferibili ad un esame unico
- Il FGR non deve essere più definito solo da indici biometrici $< 10^\circ$ pc