Hyperglycaemia in Pregnancy (HIP)

**The FIGO approach**

*Prof. Moshe Hod*
*Rabin Medical Center*
*Israel*

President, European Association of Perinatal Medicine
Chairman, FIGO Hyperglycemia in Prenatal Working Group
The evolution of Diabetes and Pregnancy

**The Pedersen legacy**
- 1946 The Copenhagen Centre for Pregnant Diabetics.
- 1949 The White classification

**1922: Discovery of insulin**
Maternal mortality >50%; Perinatal mortality >80%

**1940s**
Perinatal mortality ~25%

**1950s**
HbA₁c in early pregnancy associated with congenital malformations

**1960s**
GDM Criteria

**1970s**
The first pre-Pregnancy clinic

**1976**
Fuel mediated teratogenesis

**1970s, 1980s**
The Chicago DPC

**1980s**
Late 80’s: Tight glycaemic control throughout pregnancy is firmly established

**1989**
St. Vincent Declaration October

**1990s**
New Technologies
CGMS

**2000s**
Insulin analogues in pregnancy

**2000-2008**
HAP

**GDM**

**The Freinkel legacy**
- 1970s, 1980s The Chicago DPC
- 1976 The first pre-Pregnancy clinic
- 1989 St. Vincent Declaration October

**Fuel mediated teratogenesis**
Introduction of capillary self-monitoring for blood glucose

**New Technologies**
CSII
CGMS

**CSII, CGMS**

**The evolution of Diabetes and Pregnancy**

**HAP**

**1946**
The Copenhagen Centre for Pregnant Diabetics.

**1949**
The White classification

**1964**
GDM Criteria

**1976**
The first pre-Pregnancy clinic

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**1990s**
New Technologies
CGMS

**2000s**
Insulin analogues in pregnancy

**2000-2008**
HAP

**GDM**
HIP is a major global health problem

Hyperglycemia is one of the most common medical conditions women encounter during pregnancy.

1 in 6 live births occur to women with some form of hyperglycemia.

84% of which are due to GDM.

Hyperglycemia/GDM is associated with:

- Leading causes of maternal mortality
- Higher incidence of maternal morbidity
- Higher incidence of perinatal and neonatal morbidity
- Later long term consequences for both mother and child
Contributors for Maternal Morbidity and Foetal Programming

- Maternal Anaemia: ~56 million pregnancies
- Maternal Undernutrition: ~26 million pregnancies
- Maternal Malaria: ~20 million pregnancies
- Maternal Obesity: ~42 million pregnancies
- Maternal Hyperglycemia: ~21 million pregnancies
- Maternal Hypertensive Disorders: ~7 million pregnancies

~127 million live births
The HIP Challenge

127 million live births per year

India, China, Pakistan, Indonesia, Bangladesh, Brazil, Mexico account for >65 million deliveries

~21 million per year complicated by hyperglycaemia

~3 to 4 million detected and treated

Receive postpartum follow up and lifestyle advice?
HIP is a major global health problem

“...Facing a “Slow-Motion Disaster”
UN Meeting on Non Communicable Diseases

Margaret Chan, Director-General,
World Health Organization (WHO), Sept. 2011

- There is an increasing global crisis in NCD
- NCD are associated with mortality, morbidity, and long-term disability
- Two of three deaths globally are attributable NCDs

Non Communicable Diseases are Programmed & Imprinted during Pregnancy

Diagnosis and management may help turn the tide of the Diabetes - NCD pandemic
WHO calls for global action to halt rise in and improve care for people with diabetes

First WHO Global report on diabetes: 422 million (8.5%) adults live with diabetes, mainly in developing countries

1980 - 108 million (4.7%)

Maternal Fetal Medicine

Non Communicable Diseases are Programmed & Imprinted during Pregnancy
The Vicious Cycle - NCD Epidemic

Obesity, Diabetes, Hypertension, Metabolic Syndrome & Pregnancy

Predictable & Preventable?

1\textsuperscript{st} Trimester
Prediction and Prevention

Prevention of Pregnancy Induced Complications (GDM/PET/IPL/IUGR/IUFD)

Pre-Conception Management

NCD’s (DM, Obesity, HT, CVD…)

2\textsuperscript{nd} and 3\textsuperscript{rd} Trimester

Pregnancy Induced Complications (GDM, PET, PTL, IUGR, IUFD)

Abnormal Intrauterine Metabolic Environment

Fuel Mediated Teratogenesis

Fetal Programming & Imprinting

Diagnosis, Management & Follow up

Delivery

Post-Partum Management

Offspring Health

Maternal Health

Neonatal Health

Early metabolic syndrome

Childhood obesity

Neonatal Insulin resistance

Adulthood obesity

PCOS

Maternal Health

Fuel Mediated Teratogenesis
Development of a simple tool to predict the risk of postpartum diabetes in women with gestational diabetes mellitus

M. Köhler$^{1,2}$ · A. G. Ziegler$^{1,2,3}$ · A. Beyeler$^{1,2}$

Methods Data from 257 GDM women who were prospectively followed for diabetes outcome over 20 years of follow-up were used to develop and validate the risk score. Participants were divided into training and test sets.

<table>
<thead>
<tr>
<th>Risk category</th>
<th>Score interval</th>
<th>Predicted risk (95 % CI) in the training set</th>
<th>Observed rates (95 % CI) in the test set</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n 5 years 10 years 15 years</td>
<td>n 5 years 10 years 15 years</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>&lt;140</td>
<td>83 13 % (7–19 %) 21 % (13–29 %) 26 % (16–35 %)</td>
<td>39 11 % (0–21 %) 15 % (2–27 %) 19 % (4–32 %)</td>
</tr>
<tr>
<td>Medium</td>
<td>140–220</td>
<td>35 31 % (22–39 %) 47 % (36–56 %) 54 % (42–63 %)</td>
<td>22 29 % (6–47 %) 44 % (14–64 %) 53 % (18–74 %)</td>
</tr>
<tr>
<td>High</td>
<td>220–300</td>
<td>37 60 % (47–70 %) 79 % (66–86 %) 85 % (73–92 %)</td>
<td>26 64 % (30–81 %) 71 % (36–87 %) 89 % (41–98 %)</td>
</tr>
<tr>
<td>Very high</td>
<td>&gt;300</td>
<td>16 90 % (72–96 %) 98 % (88–100 %) 99 % (92–100 %)</td>
<td>5 80 % (0–97 %) (\text{a}) (\text{a})</td>
</tr>
</tbody>
</table>

CI confidence interval
“...Achieve a pregnancy outcome in the diabetic woman that approximates that of the non-diabetic woman – 10 years.....”

Was it achieved in 28 years ...???

Fetal
- Congenital anomalies
- Spontaneous abortions
- Intrauterine growth restriction (IUGR)
- Perinatal mortality (PNM)

Maternal
- Abortions
- Hypoglycemia
- DKA
- Pre-GDM

Can we do better ...???
127 million live births/year

India, China, Pakistan, Indonesia, Bangladesh, Brazil, Mexico

>65 million deliveries

~21 million /year complicated by hyperglycaemia

~3 to 4 million detected and treated

Receive Post partum follow up and lifestyle advice?
The Controversy - Diagnosis

❖ Universal testing vs Risk Assessment
❖ A one-step procedure vs Two Steps
❖ Cut-off values
The evolution of Diabetes and Pregnancy

1922: Discovery of insulin

1946
The Copenhagen Centre for Pregnant Diabetics.

1949
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1964
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2000-2008
Definition of Normality

The FIGO HIP Initiative

2013-2015 1st Phase

2016-2018 2nd Phase
Hyperglycemia and Adverse Pregnancy Outcome

NIH Multicentral Multinational Study

- ~25,000+ NON-DIABETIC GRAVIDAS
- 15 CENTERS
- 9 DIFFERENT COUNTRIES
- BLINDED 75 GM OGTT 24-32 WEEKS
- EXCLUDED IF FBS >105 MG/DL, OR 2-HR >200 MG/DL
- BUDGET – 20,000,000 US$
Hyperglycemia and Adverse Pregnancy Outcomes

The HAPO Study Cooperative Research Group* 

RESULTS

For the 23,316 participants with blinded data, we calculated adjusted odds ratios for adverse pregnancy outcomes associated with an increase in the fasting plasma glucose level of 1 SD (6.9 mg per deciliter [0.4 mmol per liter]), an increase in the 1-hour plasma glucose level of 1 SD (50.9 mg per deciliter [1.7 mmol per liter]), and an increase in the 2-hour plasma glucose level of 1 SD (23.5 mg per deciliter [1.3 mmol per liter]). For birth weight above the 90th percentile, the odds ratios were 1.38 (95% confidence interval [CI], 1.32 to 1.44), 1.46 (1.39 to 1.53), and 1.38 (1.32 to 1.44), respectively; for cord-blood serum C-peptide level above the 90th percentile, 1.55 (95% CI, 1.47 to 1.64), 1.46 (1.38 to 1.54), and 1.37 (1.30 to 1.44); for primary cesarean delivery, 1.11 (95% CI, 1.06 to 1.15), 1.10 (1.06 to 1.15), and 1.08 (1.03 to 1.12); and for neonatal hypoglycemia, 1.08 (95% CI, 0.98 to 1.19), 1.13 (1.03 to 1.26), and 1.10 (1.00 to 1.12). There were no obvious thresholds at which risks increased. Significant associations were also observed for secondary outcomes, although these tended to be weaker.
IADPSG

Hyperglycaemia in Pregnancy

Diagnostic Criteria
**IADPSG Diagnostic Thresholds**  

**GDM**

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value (mmol/L)</th>
<th>Value (mg/dL)</th>
<th>Cumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fasting VPG</td>
<td>≥ 5.1</td>
<td>≥ 92</td>
<td>8.3</td>
</tr>
<tr>
<td>1 hr VPG</td>
<td>≥ 10.0</td>
<td>≥ 180</td>
<td>14.0</td>
</tr>
<tr>
<td>2 hr VPG</td>
<td>≥ 8.5</td>
<td>≥ 153</td>
<td>16.1</td>
</tr>
</tbody>
</table>

*One or more* of these values from a 75-g OGTT must be equaled or exceeded for the diagnosis of GDM

*Universal*
<table>
<thead>
<tr>
<th>Indication</th>
<th>NNT</th>
<th>NNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Progesterone Prevention of PTB</td>
<td>3-7</td>
<td>100-413</td>
</tr>
<tr>
<td>LGA</td>
<td>12 (7.5, 19)</td>
<td>145 (90, 232)</td>
</tr>
<tr>
<td>Eclampsia/pre-eclampsia</td>
<td>103 (36, 292)</td>
<td>1,242 (431, 3,584)</td>
</tr>
<tr>
<td>Progesterone Short cervix</td>
<td>14-28</td>
<td>660</td>
</tr>
<tr>
<td>MgSo4</td>
<td>46-63</td>
<td>NA</td>
</tr>
<tr>
<td>Neuroprotection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MgSo4</td>
<td>34-300</td>
<td>NA</td>
</tr>
<tr>
<td>Eclampsia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspirin PET</td>
<td>19-200</td>
<td>NA</td>
</tr>
<tr>
<td>Aspirin IUGR</td>
<td>143</td>
<td>NA</td>
</tr>
<tr>
<td>Aspirin PTL</td>
<td>34-143</td>
<td>NA</td>
</tr>
</tbody>
</table>
Report of a World Health Organization Consultation

Diagnostic criteria and classification of hyperglycaemia first detected in pregnancy: A World Health Organization Guideline

2013
Strategies for implementing the WHO diagnostic criteria and classification of hyperglycaemia first detected in pregnancy

Stephen Colagiuri a,*, Maicon Falavigna b, Mukesh M. Agarwal c, Michel Boulvain d, Edward Coetzee e, Moshe Hod f, Sara J. Meltzer g, h, Boyd Metzger i, Yasue Omori j, Ingvars Rasa k, Maria Inês Schmidt b, Veerasamy Seshiah l, David Simmons m, Eugene Sobngwi n, o, Maria Regina Torloni p, Hui-xia Yang q
FIGO and the GDM Initiative

FIGO brings together professional societies of obstetricians and gynecologists.

Member Societies in 130 countries.

FIGO’s vision is for women of the world to achieve the highest possible standards of physical, mental, reproductive and sexual health and wellbeing throughout their lives.
FIGO and the FIGO initiative for GDM

Identified **GDM/HIP** as a priority area for FIGO to work in and started the **GDM Initiative in Jan. 2014** by establishing an **expert group** to develop and disseminate an **Evidence-based, practical and pragmatic standards of care protocol** for national associations to adopt and promote a uniform approach to testing, diagnosis and management of GDM for all countries and regions based on their; 

**financial, human and infrastructure resources.**

With the overall aim:

- **Advancement** of women’s reproductive health and rights
- **Promotion** of newborn and child health
- **Prevention** of type 2 diabetes & other NCDs

= FIGO “JOINS THE GAME”
FIGO Guidelines produced

Dec 2013
FIGO Expert Group on GDM established

Oct 2015
Launch of guidelines on diagnosis, management and care
FIGO (WHO) Classification

- Hyperglycemia in pregnancy
  - Diabetes in pregnancy
    - Diagnosed before the start of pregnancy: Type 1, Type 2
  - Gestational diabetes mellitus
    - Diagnosed for the first time during pregnancy: Type 1, Type 2

Figure 1 Types of hyperglycemia in pregnancy.
Figure 2: The difference between diabetes in pregnancy and gestational diabetes mellitus.
FIGO recommends and supports the call for greater attention and focus on the links between

*Maternal health*  
*Non Communicable Diseases*

in the sustainable developmental agenda.
FIGO – Main Messages
Universal Testing

- FIGO adopts and supports the IADPSG/WHO/IDF position that:
  all pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure

- FIGO encourages all countries... to ensure universal testing of all pregnant women for hyperglycemia
# FIGO Options for Diagnosis of GDM

Options for diagnosis of GDM based on resource settings.

<table>
<thead>
<tr>
<th>Setting</th>
<th>Who to test and when</th>
<th>Diagnostic test</th>
<th>Interpretation</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fully resourced settings</td>
<td>All women at booking/first trimester</td>
<td>Measure FPG, RBG, or HbA1c to detect diabetes in pregnancy If negative: perform 75-g 2-hour OGT</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fully resourced settings serving ethnic populations at high risk</td>
<td>All women at booking/first trimester</td>
<td>Perform 75-g 2-hour OGT to detect diabetes in pregnancy If negative: repeat 75-g 2-hour OGT</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any setting (basic); particularly medium- to low-resource settings serving ethnic populations at risk</td>
<td>All women between 24 and 28 weeks</td>
<td>Perform 75-g 2-hour OGT</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>
A pregnant woman waits for her gestational diabetes screening in Tamil Nadu, India. Photograph courtesy of the World Diabetes Foundation.
### FIGO Alternative Strategies

**Alternative strategies as currently used in specified countries**

<table>
<thead>
<tr>
<th>Region</th>
<th>Screening Period</th>
<th>Initial Test</th>
<th>Additional Criteria</th>
<th>Diagnostic Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>China:</strong> Medium- to low-resource settings serving populations at high risk</td>
<td>All women at booking/first trimester</td>
<td>Measure FPG to detect diabetes in pregnancy</td>
<td>&gt;7.0 mmol/L or &gt;126 mg/dL. FPG values between 5.6 and 6.9 mmol/L (100–125 mg/dL) consider as GDM</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td>If negative: perform 75-g 2-hour OGTT</td>
<td>or To reduce number of OGTTs measure FPG. Only in women with values between 4.5 mmol/L and 5.0 mmol/L (81–90 mg/dL) perform 75-g 2-hour OGTT</td>
<td>Value &gt;5.1 mmol/L or &gt;92 mg/dL diagnostic of GDM</td>
</tr>
<tr>
<td><strong>Indian subcontinent:</strong> Medium- to low-resource settings serving rural/semi-urban/urban ethnic populations at high risk</td>
<td>All women at booking/first trimester</td>
<td>Measure fasting or nonfasting 2-hour value after 75-g OGTT</td>
<td>Reading between 7.8 and 11.0 mmol/L or 140 and 199 mg/dL indicates GDM</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td>If negative: repeat test</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Latin America:</strong> Medium- to low-resource settings</td>
<td>All women at booking/first trimester</td>
<td>Measure FPG to detect diabetes in pregnancy</td>
<td>&gt;7.0 mmol/L or &gt;126 mg/dL. FPG values between 5.6 and 6.9 mmol/L (100–125 mg/dL), consider as GDM</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td>If negative: perform 75-g 2-hour OGTT</td>
<td>75-g 2-hour glucose value &gt;7.8 mmol/L or &gt;140 mg/dL is diagnostic of GDM</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FPG of 5.6 mmol/L or above or 2-hour plasma glucose of 7.8 mmol/L or above is diagnostic</td>
</tr>
<tr>
<td><strong>UK:</strong> all settings</td>
<td>Selected women at booking/as soon as possible</td>
<td>Perform 75-g 2-hour OGTT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td>If negative: perform 75-g 2-hour OGTT</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Offered also to other women with risk factors for GDM*
INITIATIVE FIGO SUR LES DIABÈTES GESTATIONNELS

FIGO recommande que l'hyperglycémie/Diabète sucré gestationnel (DSG) soit considéré comme une priorité de santé mondiale

L'hyperglycémie est l'un des conditions médicales les plus courantes rencontrées par les femmes pendant la grossesse. 

Dont 84% sont dus au DSG

L'HYPERGLYCÉMIE/LE DSG SONT ASSOCIÉS À :
- Principales causes de mortalité maternelle
- Incidence plus élevée de morbidité maternelle
- Incidence plus élevée de morbidité perinatale et néonatale
- Consequences ultérieures à long terme pour la mère et l'enfant

Les pays à revenus faibles ou intermédiaires représentent :
- 85% des accouchements mondiaux annuels
- 80% du fardeau mondial du diabète
- 90% de tous les décès perinataux et maternels et grossesses à issues négatives

LA GROSSESSE OFFRE UNE POSSIBILITÉ DE :
- Établir des services
- Améliorer la santé
- Éviter la transmission intergénérations de maladies non-transmissibles

TRAVAILLER À ATTEINDRE UN OBJECTIF DE DÉVELOPPEMENT DURABLE (ODD) 3

Étant donné le lien existant entre l'hyperglycémie pendant la grossesse, les grossesses à issues négatives et le risque de diabète futur, à la fois chez la mère et l'enfant, un accent mis sur la prévention et le dépistage de l'hyperglycémie est nécessaire à l'échelle mondiale.
FIGO GDM guidelines

Executive summary
The target audience
Assessment of quality of evidence and grading of recommendation
Gestational Diabetes Mellitus (GDM)—Background, Definition, Epidemiology, Pathophysiology
Diagnosing Gestational Diabetes Mellitus
Glucose Measurement: Technical considerations in laboratory and point of care (POC) testing
Management during pregnancy
Post-Partum Management
Pre Conception Care
Research Priorities
Appendix
  Current Approaches to GDM diagnosis in selected high burden developing countries
  Gestational Diabetes Formulas for Cost-Effectiveness - GeDiForCE®
  Research Priorities in Gestational Diabetes

Recommendations graded by quality of evidence
Provides a call for action to policy makers
Provides options according to resource setting
Identifies key points of intervention
FIGO GDM guidance: Some highlights

1: Describes and differentiates GDM

---

**Figure 1** Types of hyperglycemia in pregnancy.

- **Diabetes in pregnancy**
  - Diagnosed before the start of pregnancy
    - Type 1
    - Type 2
  - Diagnosed for the first time during pregnancy
    - Type 1
    - Type 2

**Figure 2** The difference between diabetes in pregnancy and gestational diabetes mellitus.

- **Diabetes in pregnancy**
  - Pregnancy in previously known diabetes
  - Hyperglycemia diagnosed for the first time during pregnancy that meets WHO criterion for diabetes mellitus in the nonpregnant state
    - May occur anytime during pregnancy including the first trimester

- **Gestational diabetes mellitus**
  - Hyperglycemia during pregnancy that is not diabetes
  - Hyperglycemia diagnosed for the first time during pregnancy
    - May occur anytime during pregnancy but most likely after 24 weeks
2. Highlights the significance for global health

Table 3
Maternal and fetal morbidity associated with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Maternal morbidity</th>
<th>Fetal/ neonatal/ child morbidity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early pregnancy</td>
<td>Stillbirth</td>
</tr>
<tr>
<td>Spontaneous abortions</td>
<td>Neonatal death</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>Nonchromosomal congenital malformations</td>
</tr>
<tr>
<td>Pre-eclampsia</td>
<td>Shoulder dystocia</td>
</tr>
<tr>
<td>Gestational hypertension</td>
<td>Respiratory distress syndrome</td>
</tr>
<tr>
<td>Excessive fetal growth (macrosomia, large for gestational age)</td>
<td>Cardiomyopathy</td>
</tr>
<tr>
<td>Hydramnios</td>
<td>Neonatal hypoglycemia</td>
</tr>
<tr>
<td>Urinary tract infections</td>
<td>Neonatal polycythemia</td>
</tr>
<tr>
<td>Delivery</td>
<td>Neonatal hyperbilirubinemia</td>
</tr>
<tr>
<td>Preterm labor</td>
<td>Neonatal hypocalcemia</td>
</tr>
<tr>
<td>Traumatic labor</td>
<td>Erb's palsy (as consequence of birth injury)</td>
</tr>
<tr>
<td>Instrumental delivery</td>
<td>Programming and imprinting; fetal origins of disease: diabetes, obesity, hypertension, metabolic syndrome</td>
</tr>
<tr>
<td>Cesarean delivery</td>
<td></td>
</tr>
<tr>
<td>Postoperative/postpartum infection</td>
<td></td>
</tr>
<tr>
<td>Postoperative/postpartum hemorrhage</td>
<td></td>
</tr>
<tr>
<td>Thromboembolism</td>
<td></td>
</tr>
<tr>
<td>Maternal morbidity and mortality</td>
<td></td>
</tr>
<tr>
<td>Hemorrhage</td>
<td></td>
</tr>
<tr>
<td>Puerperium</td>
<td></td>
</tr>
<tr>
<td>Failure to initiate and/or maintain breastfeeding</td>
<td></td>
</tr>
<tr>
<td>Infection</td>
<td></td>
</tr>
<tr>
<td>Long-term postpartum</td>
<td></td>
</tr>
<tr>
<td>Weight retention</td>
<td></td>
</tr>
<tr>
<td>GDM in subsequent pregnancy</td>
<td></td>
</tr>
<tr>
<td>Future overt diabetes</td>
<td></td>
</tr>
<tr>
<td>Future cardiovascular disease</td>
<td></td>
</tr>
</tbody>
</table>

FIGO Boxes highlight salient points

- FIGO recommends and supports the call for greater attention and focus on the links between maternal health and noncommunicable diseases in the sustainable developmental agenda.
Universal testing: All pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure and FIGO encourages all countries and its member associations to adapt and promote strategies to ensure this.

- FIGO adopts and supports the IADPSG/WHO/IDF position that all pregnant women should be tested for hyperglycemia during pregnancy using a one-step procedure.
- FIGO encourages all countries and its member associations to adapt and promote strategies to ensure universal testing of all pregnant women for hyperglycemia during pregnancy.

- All countries have an obligation to implement the best GDM testing and management practices they can.
- FIGO acknowledges that for global progress to be made, India, China, Nigeria, Pakistan, Indonesia, Bangladesh, Brazil, and Mexico must be key targets for focused GDM attention.
Criteria for diagnosis: The WHO criteria for diagnosis of diabetes mellitus in pregnancy [1] and the WHO and the International Association of Diabetes in Pregnancy Study Groups (IADPSG) criteria for diagnosis of GDM [1,2] should be used when possible.

- FIGO adopts the WHO (2013) criteria for diagnosis of diabetes mellitus in pregnancy.
- FIGO adopts the WHO (2013) and IADPSG (2010) criteria for diagnosis of gestational diabetes mellitus. Given the resource constraints in many low-resource countries, other strategies described herein are considered equally acceptable.
5: Recommendation for diagnosis

Table 4
Options for diagnosis of gestational diabetes mellitus based on resource settings.

<table>
<thead>
<tr>
<th>Setting</th>
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<tr>
<td>Fully resourced settings serving ethnic populations at high riska</td>
<td>All women at booking/first trimester</td>
<td>Perform 75-g 2-hour OGTT to detect diabetes in pregnancy</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>24–28 weeks</td>
<td>If negative: perform 75-g 2-hour OGTT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any setting (basic); particularly medium- to low-resource settings serving ethnic populations at risk</td>
<td>All women between 24 and 28 weeks</td>
<td>Perform 75-g 2-hour OGTT</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Pragmatic guides for testing, diagnosis and management must be based on each country’s available:

- **Finances**
- **Human Resources**
- **Infrastructure Resources**

While this is the optimal recommendation, alternatives are given in acknowledgement of limitations faced in diverse settings.
Technical considerations in laboratory and point of care (POC) testing

- GDM diagnosis should be ideally based on blood tests done in an accredited laboratory on properly collected and transported venous plasma samples.

- FIGO recommends the use of a plasma-calibrated handheld glucometer with properly stored test strips to measure plasma glucose in primary care settings, particularly in low-resource countries, where a close-by laboratory or facilities for proper storage and transport of blood samples to a distant laboratory may not exist. This may be more convenient and reliable than tests done on inadequately handled and transported blood samples in a laboratory. It is recommended that from time to time a few samples are parallel tested in an accredited laboratory to document the variability.

- FIGO recommends that all laboratories and clinical services document their baseline quality and work toward improvement irrespective of the resources available.
7: Describes care for women with GDM

Management of GDM: Management should be in accordance with available national resources and infrastructure even if the specific diagnostic and treatment protocols are not supported by high-quality evidence, as this is preferable to no care at all.

Box 1
Recommendations for prenatal supervision in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine prenatal care should include visits to:</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>• Healthcare professionals skilled in care of women with diabetes in pregnancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(obstetrician, perinatologist, diabetologist, diabetes educator, nutritionist etc):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1–3 weeks as needed</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>• Nurse: Weight, blood pressure, dipstick urine protein: 1-2 weeks as needed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prenatal follow-up determined locally according to available resource:</td>
<td>Mid and Low</td>
<td>2</td>
</tr>
<tr>
<td>• A minimum of monthly check-ups with a healthcare provider knowledgeable in diabetes in pregnancy</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
7: Describes care for women with GDM

Box 2
Recommendations for fetal growth assessment in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical and sonographic growth assessments every 2–4 weeks from diagnosis until term</td>
<td>High</td>
<td>1</td>
</tr>
<tr>
<td>Periodic clinical and sonographic growth assessments from diagnosis until term</td>
<td>Mid and Low</td>
<td>2</td>
</tr>
</tbody>
</table>

Box 3
Recommendations for fetal well-being surveillance in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Use cardiotocography and/or biophysical profile or kick-count as indicated according to local protocol</td>
<td>All</td>
<td>1</td>
</tr>
</tbody>
</table>
Box 4
Recommendations for timing and mode of delivery in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>As per local protocol or as suggested in Figure 4</td>
<td>All</td>
<td>2/8000</td>
</tr>
</tbody>
</table>

Figure 4. Timing of delivery in women with gestational diabetes mellitus and diabetes in pregnancy.
Pharmacological management: If lifestyle modification alone fails to achieve glucose control, metformin, glyburide, or insulin should be considered as safe and effective treatment options for GDM.

Box 5
Recommendations for glucose monitoring in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-monitoring of blood glucose is recommended for all pregnant women with diabetes, 3–4 times a day:</td>
<td>All</td>
<td>2[☆☆☆☆]</td>
</tr>
<tr>
<td>• Fasting: once daily, following at least 8 hours of overnight fasting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Postprandial: 2-3 times daily, 1 or 2 hours after the onset of meals, rotating meals on different days of the week</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-monitoring of blood glucose is recommended for all pregnant women with diabetes at least once daily, with documented relation to timing of meal</td>
<td>Low</td>
<td>2[☆☆☆☆]</td>
</tr>
</tbody>
</table>
7: Describes care for women with GDM

**Box 9**
Recommendations for nutrition therapy in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>We recommend that the following principles should be adhered to in women with diabetes:</td>
</tr>
<tr>
<td>- Design an appropriate diet with respect to prepregnancy BMI, weight, physical activity, habits, and personal and cultural preferences.</td>
</tr>
<tr>
<td>- Provide routine follow-up and diet adjustments throughout pregnancy to achieve and maintain treatment goals.</td>
</tr>
<tr>
<td>- Offer training, education, support, and follow-up by a qualified provider experienced in care of women with diabetes. Issues for discussion include: weight control, food records, carbohydrate counting, hypoglycemia, healthy foods, and physical activity.</td>
</tr>
<tr>
<td>We suggest that caloric intake be calculated based on prepregnancy weight and adjusted according to the woman's metabolic response.</td>
</tr>
</tbody>
</table>

**Box 10**
Recommendations for physical activity in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
</tr>
</thead>
<tbody>
<tr>
<td>We suggest that appropriate, personally adapted, physical activity be recommended for all women with diabetes:</td>
</tr>
<tr>
<td>- Planned physical activity of 30 min/day</td>
</tr>
<tr>
<td>- Brisk walking or arm exercises while seated in a chair for 10 min after each meal.</td>
</tr>
<tr>
<td>- Women physically active prior to pregnancy should be encouraged to continue their previous exercise routine.</td>
</tr>
</tbody>
</table>

- FIGO recognizes that nutrition counseling and physical activity are the primary tools in the management of GDM.
- FIGO recommends that women with GDM receive practical nutrition education and counseling that empowers them to choose the right quantity and quality of food.
- Women with GDM must be repeatedly advised to continue the same healthy eating habits after delivery to reduce the risk of future T2DM.
Box 11
Recommendations for **pharmacological treatment** in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insulin, glyburide, and metformin are safe and effective therapies for GDM during the second and third trimesters, and may be initiated as first-line treatment after failing to achieve glucose control with lifestyle modification. Among OADs, metformin may be a better choice than glyburide [109].</td>
<td>All</td>
<td>2</td>
</tr>
</tbody>
</table>
| Insulin should be considered as the first-line treatment in women with GDM who are at high risk of failing on OAD therapy, including some of the following factors [129]:  
  - Diagnosis of diabetes <20 weeks of gestation  
  - Need for pharmacologic therapy >30 weeks  
  - Fasting plasma glucose levels >110 mg/dL  
  - 1-hour postprandial glucose >140 mg/dL  
  - Pregnancy weight gain >12 kg | High             | 2|⊕⊕⊕⊕⊕ |

Box 12
Recommendations for **insulin treatment** in women with gestational diabetes mellitus.

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Resource setting</th>
<th>Strength of recommendation and quality of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>The following insulins may be considered safe and effective treatment during pregnancy: regular insulin, NPH, lispro, aspart and detemir.</td>
<td>All</td>
<td>1</td>
</tr>
</tbody>
</table>
8: Includes recommendations for Pre-conception and inter-pregnancy

- FIGO calls for public health measures to increase awareness and acceptance of preconception counseling and to increase affordability and access to preconception services to women of reproductive age, as this is likely to have both immediate and lasting benefits for maternal and child health.
9: Includes recommendations for Postpartum care

- FIGO supports the concept that the postpartum period in women with GDM provides an important platform to initiate early preventive health for both the mother and the child who are both at a heightened risk for future obesity, metabolic syndrome, diabetes, hypertension, and cardiovascular disorders.

- FIGO encourages obstetricians to establish connections with family physicians, internists, pediatricians, and other healthcare providers to support postpartum follow-up of GDM mothers linked to the regular check-up and vaccination program of the child to ensure continued engagement of the high-risk mother-child pair.

PREGNANCY OFFERS A WINDOW OF OPPORTUNITY TO:

→ Establish services
→ Improve health
→ Prevent intergenerational transmission of non-communicable diseases

POSTPARTUM AIMS

- Early DETECTION of infections
- SUPPORT of breastfeeding
- ADVICE on pregnancy spacing
- RETEST all women with GDM at 6-12 weeks postpartum
- Future blood glucose TESTS
Endorsements & Approvals

Approved

- Chinese Society of Perinatal Medicine
- European Board and College of Obstetrics and Gynaecology (EBCOG)
- European Diabetic Pregnancy Study Group (DPSG)
- African Federation of Obstetrics and Gynecology (AFOG)
- Latin America Diabetic Pregnancy Study Group (LADPSG)
- The Australian Diabetes in Pregnancy Society (ADIPS)
- International Association of Diabetes in Pregnancy Study Groups (IADPSG)
- International Association of Diabetes in Pregnancy Study Groups (IADPSG)
- European Association of Perinatal Medicine (EAPM)
- Diabetes in Pregnancy Study Group of India (DIPSI)
- RCOG - pending
- International Diabetes Foundation (IDF)

FIGO Committees endorsement:

- Executive Board
- Best Practice on Maternal-Foetal Medicine Working Group
- FIGO Clinical Obstetrical Committee
- FIGO Maternal Nutrition Initiative Expert Group
- FIGO Challenges in Care of Mothers and Infants during Labour and Delivery Working Group
- FIGO Antenatal assessment
- FIGO Safe Motherhood and Newborn Health Committee
FIGO became serious partner in effort to fight HIP

The Vancouver Declaration
Vancouver (Canada), October & December 2015
Organized by FIGO and IDF

XXI FIGO World Congress of Gynecology and Obstetrics
4 - 9 October 2015

IDF Vancouver 2015
World Diabetes Congress
30 November - 4 December
Focus and dissemination

All countries have an obligation to implement the best testing and management practices they can!

**PRIORITY COUNTRIES:**
India, China, Nigeria, Pakistan, Indonesia, Bangladesh, Brazil and Mexico

These 8 countries account for 55% of global live births and 55% of the global burden of diabetes
New HIP Working Group

Jan 2016

FIGO Working Group on HIP instated

Oct 2018

Report on successes at FIGO World Congress

"Training, advocacy and evidence generation on hyperglycaemia in pregnancy to reduce poor pregnancy outcomes; decrease maternal and neonatal morbidity and mortality; and cut future risk of diabetes & cardio-vascular disease"
The next three years ....

Leadership, support and collaboration from international experts

- Capacity Building & Training
- Awareness & Advocacy
- Research & Implementation Science

International organizations & key governments implementing targeted communication & advocacy strategies

Comprehensive, role based training programs being rolled-out to healthcare workers

Evidence being generated on priority areas to fill knowledge gaps & feed into service delivery

Raised knowledge & skills of FIGO and 130 affiliated member associations
The Strength of FIGO

- Commitment from FIGO
- Strong Partnerships with International Organizations
- 130 National Member Associations
- FIGO Perinatal involvement

- HIP Initiative Working Group (M. Hod)
- Good Clinical Practice in MFM Working Group (GC Di Renzo)
- Care of Mothers and Infants during labor and Delivery (R. Romero)
- Safe Motherhood and Newborn Health Committee (G. Visser)
- Adolescent, Pre-conception and Maternal Nutrition (M. Hanson)
- Pre-term Labor (J.L. Simpson)
- Antenatal Assessment (D.A. De Campos)
Signing of the Colombo Declaration
The Colomba Declaration Hyperglycemia in Pregnancy - South Asia

The Preamble:

Whereas

Diabetes affects the health and well-being of millions of people worldwide. In South Asia, diabetes is a major public health challenge, with a significant impact on the region’s economies and social structures. The prevalence of diabetes is increasing rapidly, driven by factors such as urbanization, lifestyle changes, and aging populations. The burden of diabetes is further exacerbated by inadequate control and management of the disease, leading to severe complications and poor health outcomes.

In particular, South Asia is experiencing a rapid rise in the prevalence of gestational diabetes, which poses a significant risk to maternal and fetal health. Gestational diabetes, if not properly managed, can lead to complications such as macrosomia, neonatal hypoglycemia, and other adverse outcomes. Moreover, women with a history of gestational diabetes are at increased risk of developing type 2 diabetes later in life, further complicating the public health landscape.

The Colomba Declaration

The Colomba Declaration on Hyperglycemia in Pregnancy - South Asia is a landmark agreement that aims to address the challenges posed by gestational diabetes in South Asia. It brings together policymakers, healthcare providers, and advocates to develop a comprehensive strategy for improving maternal and fetal outcomes in this region.

Objectives

1. **Enhancing Awareness:** Increase awareness of the risks associated with gestational diabetes and the importance of early detection and effective management.
2. **Strengthening Healthcare Systems:** Implement strategies to strengthen maternal and child health services, focusing on early detection, proper diagnosis, and effective management of gestational diabetes.
3. **Promoting Research and Innovation:** Encourage research and innovation in the field of diabetes management, with a particular focus on gestational diabetes.
4. **Collaboration and Partnership:** Foster collaboration between governmental and non-governmental organizations, academic institutions, and international partners to share knowledge and resources.

By committing to these objectives, the Declaration aims to improve maternal and fetal health outcomes in South Asia, contributing to the global efforts to reduce the burden of diabetes and its complications.
We, Hereby Agree

To undertake actions in our various capacities to support efforts to address the link between maternal health obesity and diabetes as a public health priority

To accelerate the implementation of the FIGO GDM Initiative
http://www.ijgo.org/issue/S0020-7292(15)X0015-4
in Europe, including by pursuing supportive policy actions and mobilizing resources for its implementation.
To ensure all pregnant women in Europe attending health facilities are tested for hyperglycemia using a single-step procedure. We must keep in mind accessibility and other barriers, to offer simple, cost effective, feasible and timely diagnostic tests as advocated by FIGO GDM Initiative.

To make all efforts to support post-partum follow up and engagement of the high risk mother child pair post-GDM pregnancy linked to the child’s vaccination program by engaging and collaborating with other health care professionals.

To help develop, support and carry out a robust research agenda that fuels both the discovery of new tools and procedures to improve point of care diagnostics, monitoring and management of HIP and the ability to engage, counsel and track the mother-child pair over the long term; as well as carry out operational research to improve collaboration and efficacy in existing programs, keeping in mind the health care delivery realities in different parts of Europe.

Barcelona, Spain

March 2016
Signing of the European Declaration
The 2nd Asia Pacific Symposium on Diabetes, Hypertension, Metabolic Syndrome and Pregnancy

Maternal Medicine meets Fetal Medicine

Digital Medicine and Women's Health

SHANGHAI, CHINA • OCTOBER 26-28, 2017

Save the Date
<table>
<thead>
<tr>
<th>Region</th>
<th>City</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAIDIP</td>
<td>Colombo, Sri Lanka</td>
<td>(Sept. 2016) – Accomplished</td>
</tr>
<tr>
<td>AFOG</td>
<td>Addis, Ethiopia</td>
<td>(February 2017)</td>
</tr>
<tr>
<td>Europe</td>
<td>Barcelona, Spain</td>
<td>(March 2017)</td>
</tr>
<tr>
<td>Asia</td>
<td>Bangalore, India</td>
<td>(March-April 2017)</td>
</tr>
<tr>
<td>Greater China</td>
<td>Beijing, China</td>
<td>(Sept. 2017)</td>
</tr>
<tr>
<td>FLASOG</td>
<td>Cancun, Mexico</td>
<td>(Nov. 2017)</td>
</tr>
<tr>
<td>GULF/MENA</td>
<td>Abu Dhabi, UAE</td>
<td>(Dec. 2017) - with IDF</td>
</tr>
</tbody>
</table>

**Rio October 2018**

**FIGO GLOBAL HIP DECLARATION**
The unmet need for universal testing for hyperglycaemia in pregnancy and the FIGO guideline

A Kapur, a,b T Mahmood, a,c M Hod b,d

a World Diabetes Foundation, b FIGO Working Group on Hyperglycaemia in Pregnancy, c European Board and College of Obstetrics and Gynaecology, d European Association of Perinatal Medicine,

Correspondence: Prof. M Hod, Xxxx, Xxxx. Email hodroyal@inter.net.il

Accepted 23 March 2017.
EDITORIALE

Diabete gestazionale: verso un nuovo consenso

Graziano Di Cianni
UOC Diabetologia e Malattie Metaboliche, Presidio Ospedaliero, ASL 6, Livorno

Sono decenni ormai che, quando si parla di diabete gestazionale, si fa riferimento a una “patologia senza consenso”. Dopo aver superato, infatti, lo scetticismo di chi, negli anni ottanta, non voleva riconoscere al diabete gestazionale la dignità di “entità clinica”, continuano a permanere notevoli differenze di vedute su vari aspetti del percorso diagnostico-terapeutico di questa patologia. Screening universale o selettivo, iter diagnostico mediante una fase unica o a due fasi, carico glucidico con 75 o 100 grammi, monitoraggio aggressivo con rischio di “medicalizzare” la gravidanza o “morbico” con il rischio di favorire un outcome materno-fetale sfavorevole e, infine, dopo la dieta solo l’insulina o anche la metformina, se non addirittura le sulfoniluree? E, ancora, a chi spetta la cura delle donne con diabete gestazionale? Quale il ruolo del diabetologo? Gran parte di questi interrogativi persistono tutt’oggi, nonostante sia ormai unanimemente accettato che il diabete gestazionale è a tutti gli effetti un’entità nosografica ben distinta, che se non riconosciuta e adeguatamente trattata si associa a un’elevata morbilità materno-fetale. Diagnosticare il diabete in gravidanza permette, inoltre, di identificare donne a rischio di sviluppare il diabete di tipo 2 e altre anomalia metaboliche associate alla malattia cardiovascolare. Sono, infatti, tante le affinità tra il diabete gestazionale e il diabete di tipo 2, da far sembrare uno l’anticipazione dell’altro.

Per anni la comunità scientifica ha atteso con ansia i risultati del più grande studio internazionale mai condotto sul tema: l’Hyperglycemic Adverse Pregnancy Outcome Study (HAPO Study). L’HAPO Study, pur mostrando con chiarezza il rapporto lineare tra glicemia materna e outcomes gravidici avversi, non è riuscito a definire un valore “soglia” tra condizione normale e patologica. In altri termini ha mancato uno degli obiettivi principali per cui era stato disegnato: stabilire in maniera definitiva quale livello di glicemia materna bisogna far riferimento per la diagnosi e quindi per la terapia del diabete a insorgenza in gravidanza.

I criteri diagnostici ricavati in maniera arbitraria dai risultati dell’HAPO hanno trovato solo una parziale accoglienza, venendo rigettati da importanti consensi e società scientifiche internazionali.

In questo contesto, la Federation of Gynecology and Obstetrics (FIGO) ha pubblicato nel 2013 una linea guida per la diagnosi, il management e il trattamento del diabete gestazionale, con l’intento di creare intorno a questo documento un nuovo e definitivo consenso. Il documento affronta a 360 gradi le varie problematiche del GDM, partendo dalla considerazione che si tratta di un problema di salute pubblica che merita di essere conosciuto per essere efficacemente prevenuto.

Intorno a questo documento, pratico e inizilivo, la FIGO si adopera per cercare un consenso internazionale a partire dall’Europa. Il Giornale Italiano di Diabetologia e Metabolismo si unisce a quest’intento pubblicando la versione Italiana del documento “Towards a European Consensus on Gestational Diabetes Mellitus”. Il confronto con la situazione italiana, come viene sottolineato nell’articolo redatto dal Gruppo di Studio Diabete e Gravidanza, deve servirci da stimolo per una revisione critica delle nostre procedure che, tra l’altro, sono applicate in maniera diversa nei vari ambiti regionali. È giunto il momento di trovare un consenso nazionale e internazionale sul diabete gestazionale. Il documento della FIGO che presentiamo in questo numero è un’autorevole base di partenza.
Verso un consenso europeo sul diabete gestazionale: guida pragmatica a diagnosi, management e trattamento

Gruppo di Studio Italiano Diabete e Gravidanza e FIGO

Hod M1,2, Napoli A1,3, Mello C4,5, Mecacci F4,5, Vitacolonna E6,7

1European Association of Perinatal Medicine; 2FIGO Working Group on Hyperglycemia in Pregnancy; 3Scuola di Medicina, “Sapienza” Università di Roma, Roma; 4Società Italiana di Medicina Perinatale; 5Medicina Materno Fetal Unit, Azienda Ospedaliero Universitaria Careggi, Firenze; 6Gruppo di Studio Italiano Diabete e Gravidanza AMD-SID; 7Dipartimento di Medicina e Scienze dell’Invecchiamento Università “G. d’Annunzio” Chieti-Pescara;

RIASSUNTO
L’aumento dell’incidenza di diabete e obesità a livello mondiale ha portato l’International Federation of Gynecology and Obstetrics (FIGO) nel 2014 a intraprendere una nuova iniziativa per aumentare la consapevolezza relativa al legame tra iperglicemia in gravidanza, outcome materno e fetale avverso, e rischio per la salute futura sia della madre sia del neonato. Per raggiungere tale scopo la FIGO ha riunito un gruppo di esperti per inquadrare il problema e ha sviluppato un documento che suggerisce la migliore strategia per il management dell’iperglicemia in gravidanza nell’organizzazione della sanità pubblica.

Il documento FIGO “Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care” è stato presentato al congresso mondiale FIGO nell’ottobre 2015 a Vancouver e pubblicato come supplemento speciale sull’International Journal of Gynecology and Obstetrics1). Il documento fornisce una guida pragmatica per la diagnosi, il management e il trattamento del diabete mellito gestazionale (DG) in relazione alle risorse socio-economiche dei vari Paesi ed evidenzia la necessità di un programma chiaramente definito per affrontare il problema a livello mondiale.

SUMMARY
Towards a European consensus on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care

The Italian Diabetes in Pregnancy Study Group and FIGO

In view of the rising global burden of diabetes and obesity the International Federation of Gynecology and Obstetrics (FIGO) embarked on a new initiative in 2014 to raise awareness about the link between hyperglycemia in pregnancy (HIP) and poor maternal and fetal outcomes, and the risk to the future health of the mothers with HIP and their offspring. FIGO brought together a group of experts to frame the issues and develop a document suggesting key actions to address the public health burden posed by HIP. The FIGO Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care was launched at the FIGO World Congress in October 2015 in Vancouver and published as a special supplement to the International Journal of Gynecology and Obstetrics1). The document provides pragmatic guidance for testing, management and care of women with GDM in relation to the resource settings and calls for a clearly defined global health agenda to tackle the issue on a world-wide scale.
PER CONSULTAZIONE
Il documento FIGO: una opportunità per la gestione dell’iperglycemia in gravidanza.
Commento a cura del Gruppo di Studio “Diabete e Gravidanza” AMD-SID

Vitacolonna E¹, Lencioni C², Festa C³, Scavini M⁴, Succurro E⁵, Tumminia A⁶, Napoli A³, Torlone E⁷

¹Dipartimento di Medicina e Scienze dell’Invecchiamento, Università “G. d’Annunzio” Chieti-Pescara; ²Azienda USL Toscana Nord Ovest, SS Diabetologia e Malattie del Metabolismo, Lucca; ³Dipartimento di Medicina e Psicologia, Università “Sapienza” Roma; ⁴Diabetes Research Institute, IRCCS Ospedale San Raffaele, Milano; ⁵Dipartimento di Scienze Mediche e Chirurgiche, Università degli Studi “Magna Graecia”, Catanzaro; ⁶Dipartimento di Medicina Clinica e Sperimentale, Università di Catania Ospedale Garibaldi Nesima, Catania; ⁷IC Medicina Interna, Endocrinologia e Metabolismo, Ospedale S. Maria della Misericordia, Perugia

RIASSUNTO
La International Federation of Gynecology and Obstetrics (FIGO) nel 2014 intraprese una nuova iniziativa per aumentare la consapevolezza relativa all’importante legame esistente tra iperglycemia in gravidanza, outcome materno e fetale avverso, e rischio per la salute futura sia della madre sia del neonato. Il documento FIGO, “Initiative on gestational diabetes mellitus: A pragmatic guide for diagnosis, management, and care”, a fronte di differenze nella realtà italiana che evidenzieremo, ha il grandissimo pregio di proporre/avere proposto strategie che effettivamente interpretano il concetto di “Assistenza sanitaria universale” e di affrontare il problema (suggerendo concrete soluzioni) della gestione dell’iperglycemia anche in Paesi a basso reddito. Tale considerazione, oltre al grande rispetto per la completezza del lavoro, deve indurre gli esperti e tutti gli attori coinvolti ai vari livelli a riflessioni per rivedere alcune pratiche prendendo ispirazione proprio da questo documento.

SUMMARY
The FIGO guide: an opportunity for the management of hyperglycemia in pregnancy. Comment by the “diabetes and pregnancy” AMD-SID study group

The increasing incidence of diabetes and obesity worldwide induced the International Federation of Gynecology and Obstetrics (FIGO), in 2014, to launch a new initiative to raise awareness on the important links between hyperglycemia in pregnancy, adverse maternal and fetal outcome, and risks for the future health of both mother and newborn. FIGO prepared a comprehensive document entitled “Initiative on Gestational Diabetes Mellitus (GDM): A pragmatic guide for diagnosis, management, and care” that we comment here. The FIGO initiative has the grand merit of proposing the concept of “universal health care” addressing the question, suggesting workable solutions for the management of hyperglycemia in pregnancy even in low-income countries. Here we compare the FIGO suggestion with the Italian guidelines on GDM screening. While expressing our utmost appreciation for the thoroughness of their work, this should prompt experts and all those involved at every level to review their practices, taking inspiration from this document.
The Establishment of
Institute of Perinatal Research

Vision

Establishment of an Institute in the area of perinatal and maternal and fetal health research, recognized nationally and internationally as a leading center, that will contribute to sustainable improvement in the health of the future generations.

Focus

The main focus of the Institute of Perinatal Research will be on the establishment of a leading research center dedicated to the study of Pregnancy Induced Complications
Institute of Perinatal Research

Bring
- Bring together multi-disciplinary international expertise and resources

Foster
- Foster national and international collaborations and enthusiasm

Advance
- Advance understanding and treatment of conditions adversely impacting perinatal health

**IPHRC - FIGO Global Perinatal Research Network**
- First Trimester Clinics
- Perinatal Bio Bank
- International Academic Research and Training Center
- Diagnostics Development Center
- Big Data (Clalit Research Institute)
- Health economics (Clalit Health Services)
- Technology-Transfer (Mor Research Institute - Clalit Health Services)
Collaborating Hospitals

- Rabin Medical Center, Tel Aviv University, Israel
- Clínica de Barcelona & Sant Joan de Déu, University of Barcelona, Spain
- Azienda Ospedaliero-Università Careggi, University of Florence, Italy
- Medical University of Warsaw, Warsaw, Poland

Collaborating Perinatal Research Laboratories

Small/microRNA-
- Tel Aviv University, Israel

Microbiomics
- Bar Ilan University, Israel
- Florence University, Italy

Metabolomics
- Cagliari University, Italy

Genomics
- Cyprus National Research Center/NIPD, Cyprus

The Placenta
- University of Graz, Austria

The Placenta – Model
- Tel Aviv University, Israel
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Take home messages

Hyperglycemia in Pregnancy

❖ The most common medical conditions women encounter during pregnancy

❖ Is associated with:

✓ Leading causes of maternal mortality
  ✓ Higher incidence of maternal morbidity
    ✓ Higher incidence of perinatal and neonatal morbidity
      ✓ Later long term consequences for both mother and child

❖ Pregnancy offers a window of opportunity to:

✓ Establish services
  ✓ Improve health
    ✓ Prevent intergenerational transmission no communicable diseases
FIGO recommendations

All pregnant women should be tested for hyperglycemia during pregnancy

❖ Universal testing
❖ A one-step procedure

Postpartum period as an important platform to initiate early preventive health for mother and offspring who are both at higher risk of:

❖ Future Obesity
❖ Metabolic Syndrome
❖ Diabetes
❖ Hypertension
❖ Cardiovascular Disorders
DIP2019
The 10th International Symposium on Diabetes, Hypertension, Metabolic Syndrome and Pregnancy
Maternal Medicine meets Fetal Medicine

Digital Medicine and Women’s Health
May 29 - June 1, 2019 • Florence, Italy

Save the Date

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