

## Tentative Outline

### Special Thematic Issue for Current Vascular Pharmacology

**Title of thematic issue: DIABETES AND OBESITY IN PREGNANCY: from patients to molecular mechanisms**

*Guest Editor: Luis Sobrevia*

**Aims & Scope:** Obesity in childbearing age girls increased worldwide. Obesity and type 2 diabetes mellitus (T2DM) are metabolic disturbances whose prevalence shake-hands. Pre-gestational maternal obesity is a condition that associates with foetoplacental vascular dysfunction compromising the supply of nutrients to the developing foetus. Similar alterations are seen in this vascular bed in pregnant women that develop gestational diabetes mellitus. Along with the multiple factors increasing the risk of GDM are pre-gestational maternal obesity, maternal supraphysiological gestational weight gain, being obese and having developed GDM in a previous pregnancy. The mechanisms behind these alterations include insulin resistance, dysregulation of metabolic pathways such as L-arginine/nitric oxide signalling, adenosine/L-arginine/nitric oxide (ALANO) signalling, arginases/urea, inflammation, or endoplasmic reticulum stress. Worryingly, obesity and diabetes in pregnancy results in newborns that were in utero programmed for the development of child/juvenile or adult diseases showing higher risk of cardiovascular disease, obesity, overweight, and T2DM. Whether these alterations may be prevented by treating the women before they get pregnant or treating pregnant women in a more efficient manner is not fully unveiled. Chapters in this book will board the consequences at a cellular and molecular aspects of maternal obesity (before and during pregnancy), diabetes mellitus (pregestational and gestational), gestational diabetes (i.e. obese women that present with gestational diabetes mellitus). Clinical aspects of the mothers and children and protocols for the treatment of these diseases in pregnancy will be discussed. Since the clinical information of the patients correlate with metabolic parameters at a cellular and systemic level, several pieces of evidence addressing the pathophysiology of the obesity and diabetes in pregnancy will be opened for discussion.

**Keywords:** Obesity, Pregnancy, Type 2 Diabetes Mellitus, Molecular Mechanism.

#### Subtopics:

The subtopics to be covered within this issue are listed below:

Barbra De Vrijer (Canada) - Pregestational obesity and the placenta

David Hill (Canada) - Molecular and cellular mechanisms linking placenta, pancreas and adipose

Berthil Huppertz (Austria) - The trophoblast in pregnant women with obesity

Christian Wadsack (Austria) - tbc

Abigail Fowden (UK) - Maternal obesity during pregnancy on the offspring

Raheela Kahn (UK) - The myometrium in pregnant women with gestational diabetes

Alfonso Mate (Spain) - Lifestyle and maternal nutrition and healthy pregnancy

Padma Murthy (Australia) - Inflammasome and obesity

Estela Bevilacqua (Brazil) - Stromal cell-derived factor (SDF) 2 and endoplasmic reticulum stress response of trophoblast cells in hyperglycemic condition

Carlos Escudero (Ecuador) - Long term consequences of diabetes in neonates

Reinaldo Marín (Venezuela) - Obesity and preeclampsia: effects on oxidative stress

Andrés Poblete (Chile) - Obesity and gestational diabetes in pregnant care and clinical practice

Jorge Carvajal (Chile) - The myometrium in pregnant women with obesity

Luis Sobrevia (Chile) - Gestational diabetes and the vascular dysfunction

#### Schedule:

- ✧ Manuscript submission deadline: December 2019
- ✧ Peer Review Due: March 2020
- ✧ Revision Due: May 2020
- ✧ Announcement of acceptance by the Guest Editors: June 2020

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