Prevalence of hyperglycaemia in pregnancy and gestational diabetes in the European region

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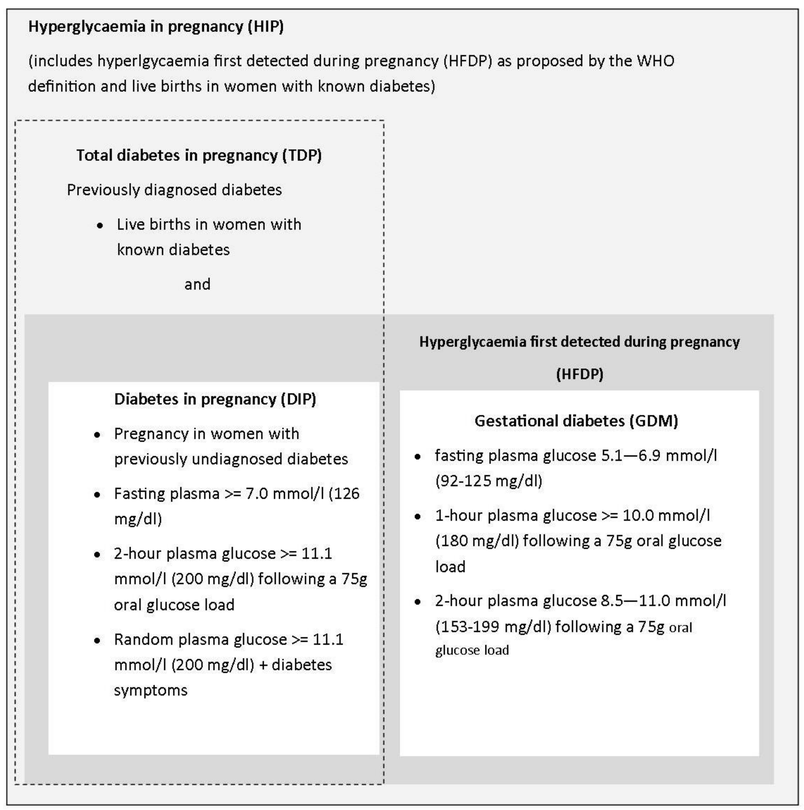
Background

Hyperglycaemia is one of the most prevalent metabolic disorders that occur during pregnancy. The International Diabetes Federation has developed a methodology for generating estimates of the prevalence of hyperglycaemia in pregnancy (HIP), including gestational diabetes, among women of childbearing age (20–49 years).

Aims and Objectives

The International Diabetes Federation defines HIP to include both hyperglycaemia first detected in pregnancy (HFDP) as well as previously known diabetes. The IDF uses the WHO definition of women with HFDP to include people with gestational diabetes (GDM) and also those first diagnosed with diabetes in pregnancy (DIP).

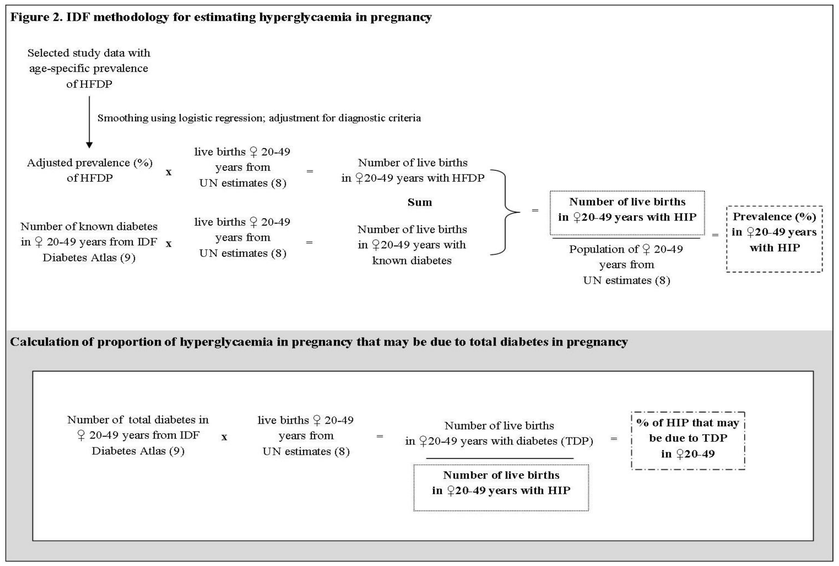
Figure 1. Terminology and classification for estimates of hyperglycaemia in pregnancy



Methods

A systematic review was conducted of studies reporting the prevalence of gestational diabetes. Studies were evaluated and scored to favour those that were representative of a large population, conducted recently, reported age-specific estimates, and case identification was based on blood test. Age-specific prevalence data were entered to produce estimates for five-year age groups using logistic regression to smooth curves, with age as the independent variable. The derived age-specific prevalence was adjusted for differences in diagnostic criteria in the underlying data. Cases of hyperglycaemia in pregnancy were derived from age-specific estimates of fertility and age-specific population estimates. Country-specific estimates were generated for the 11 countries with available data. Regional estimates were generated based on aggregation and extrapolation for an additional 52 countries and territories. Available fertility rates and diabetes prevalence estimates were used to estimate the proportion of hyperglycaemia in pregnancy that may be due to total diabetes in pregnancy .

Figure 2. IDF methodology for estimating hyperglycaemia in pregnancy



Results

After scoring and exclusion requirements, 13 European studies were selected representing 11 countries (Table 1). The majority of studies (85%) were conducted in high income countries, two were conducted in upper middle income countries and no studies were available for lower middle and low income countries within the European Region.

It was estimated that in 2013, of 10.7 million live births to women aged 20 – 49 years in the European Region, 15.2 % were affected by HIP. Thus, within the European Region, 1.7 million live births were affected by HIP. While the highest prevalence of HIP was found in pregnant women >40 years of age, the largest numbers of cases occurred in women aged 25 – 35, due to the increased fertility within that age group.

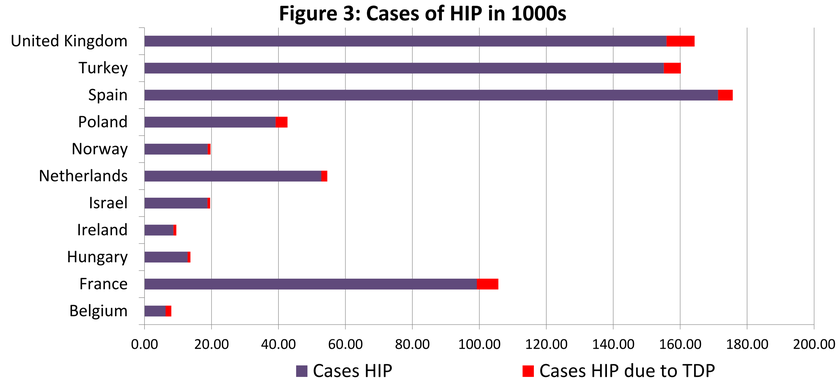
Table 1: Country level details

Country/Territory	Live births in women (20- 49 years) (1000s)	Cases (1000s)	Crude prevalence (%)	Age-standardised prevalence (%)	Proportion of cases that may be due to total diabetes in pregnancy (TDP) (%)
Belgium	127.3	8	6.3	5	21.4
France	779.5	105.7	13.6	11.6	6.1
Hungary	94.4	13.7	14.5	12.2	6.1
Ireland	70.8	9.5	13.5	11	9.3
Israel	155.8	19.6	12.6	10.5	4.1
Netherlands	175	54.6	31.2	27.2	3.3
Norway	61	19.7	32.3	31.1	4.3
Poland	401.3	42.7	10.7	9.1	8.3
Spain	478.4	175.7	36.7	32.1	2.5
Turkey	1,172.60	160.2	13.7	10.8	31.7
United Kingdom	719.5	164.3	22.8	19.8	5.1

Discussion

The estimates presented here indicate that with 10.7 million live births affected by hyperglycaemia in pregnancy in 2013 in the European region, the condition poses a threat to maternal health as well as to the health of their infants at birth or in later life. While any type of hyperglycaemia in pregnancy poses a threat to women and their infants, diabetes in pregnancy is associated with a higher risk of serious complications than gestational diabetes and thus may require more intensive management .

Figure 3: Cases of HIP in 1000s



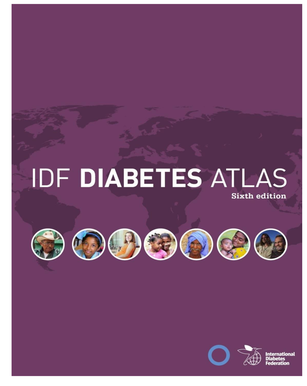
Prevalence estimates of hyperglycaemia in pregnancy are sensitive to the data from which they are derived. Within the European Region there is a lack of nationally representative studies on the prevalence of hyperglycaemia in pregnancy , especially in lower middle income countries and low income countries. More data are needed, in particular from low income countries, to strengthen the estimates. These are the first estimates of HIP in the WHO - EUR Region and conform to the new WHO recommendations regarding diagnosis. They indicate the importance of this issue from a public health and maternal and child health perspective.

Figure 4: Prevalence and Cases of HIP in EUR

Conclusion

In 2013, 1.7 million live births in the European region were affected by some form of hyperglycaemia in pregnancy, 15.2% of all live births. The highest prevalence of HIP was found in pregnant women aged over 40 years of age (33.6%), the lowest prevalence was found in women aged between 20 and 24 years of age (6.8%).

Hyperglycaemia in pregnancy is a serious and growing global health threat to women. Integration of strategies for screening and managing women with the condition into public policy and health systems is essential. The growing numbers of women developing HIP will have implications not only for health systems, but will contribute to increases in the global diabetes epidemic. That is partly due to the fact that increased risk of developing type 2 diabetes after gestational diabetes.



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