A PRELIMINARY REPORT ON THE INCIDENCE OF GESTATIONAL DIABETES IN A HISPANIC MIGRANT POPULATION

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The detection and management of gestational diabetes mellitus, as with most health problems, presents a particular problem among the migrant farm worker population. Unfortunately, the current medical literature contains little research dealing with this population.

Gestational diabetes has been defined as an abnormal glucose tolerance which develops during pregnancy and remits after the conclusion of pregnancy. This may be further categorized to diet controlled diabetes and insulin dependent diabetes. It is estimated that this condition appears in approximately 2% to 3% of all pregnancies. Maternal diabetes has long been associated with increased neonatal morbidity and mortality including macrosomia, hypoglycemia, hypocalcemia, hyperbilirubinemia, respiratory distress syndrome and stillbirths. Later in infancy and early childhood, delayed intellectual and motor development have been noted. Pettit observed in the study of the Pima Indian population that women with gestational diabetes had 10 times the risk of developing overt diabetes later in life than did women with normal pregnancies. Pettit, in a separate study, also observed that the offspring of diabetic pregnancies had three times the incidence of obesity than the offspring of nondiabetic pregnancies.

It has been common practice to screen women for gestational diabetes when certain risk factors are present. The traditional risk factors have included delivery of an infant weighing more than four kilograms (nine pounds), history of fetal loss or neonatal death, previous history of excessive weight gain, or glucosuria during pregnancy. Screening based on monitoring glucosuria has proved notoriously unreliable. Similarly, screening utilizing glycosylated hemoglobins has not proved to be sensitive enough to detect most cases of gestational diabetes.

In 1973, O'Sullivan, *et al.,* screened 752 women between their 24th and 28th week of gestation using a one-hour, non-fasting, 50 gram glucose screening test. He also did a formal three-hour glucose tolerance test (GTT) on all 752 women, along with a thorough medical and obstetrical history. O'Sullivan documented that use of traditional risk factors detected less than half the cases of gestational diabetes, while the one-hour screen uncovered 80% of the cases of gestational diabetes. The false negative rate was approximately 1%. Serum glucose values greater than 150 mg/dl on the screening test were considered abnormal. The GTT consisted of a fasting blood sugar, followed by the administration of 100 gm glucose load, all after a 12 hour fast. Serum glucose determinations were then done at one, two, and three hours after the loading dose. The upper limits of normal were: fasting – 105 mg/dl; one hour – 190 mg/dl; two hours – 165 mg/dl; and three hours – 145 mg/dl. Two or more values equal to or greater than these limits were required to make the diagnosis of gestational diabetes. *See,* Table 1.

The cost of doing formal three-hour glucose tolerance tests on all prenatal patients would prove prohibitive to most migrant health centers (average cost $20-$30 per test), more so now given the present funding cutbacks. At Indiana Health Centers – Kokomo, we elected to screen all community and migrant prenatal patients using the one-hour, 50 gram glucose screen (average cost $9-$12 per test). From March 1985 until March 1986, a total of 99 women were screened, 54 from our community population and 45 from our migrant population. The migrant population screen in the study was 100% Hispanic women. In each population 6 women were found to have abnormal screening tests. Of these 12 total women, 2 migrant women had positive GTT's (4% of the total screened), while there was only 1 community woman with a positive GTT (2% of the total screened). *See,* Table 2.

TABLE 1
Comparison of Glucose Screening Test Outcome and Presence of Gestational Diabetes

Screening Blood Sugar	Number	Gestational Diabetes Present	Gestational Diabetes Absent
Positive	109	15	94
Negative	643	4	639

TABLE 2
Preliminary Results of Glucose Screening at Indiana Health Centers

Screening Blood Sugar	Number	# Abnormal	# Abnormal GTT
Migrant	45	6 (13%)	2 (4%)
Community	54	6 (11%)	1 (2%)
Total	99	12 (12%)	3 (3%)

The 2% of women with gestational diabetes uncovered in our community population compares favorably to the 2% uncovered by O'Sullivan, *et al,* in the 1973 study. The 4% uncovered in our migrant population would seem to reinforce a generally-held view of most migrant health center clinicians that diabetes mellitus is slightly more frequent in the Hispanic migrant farm worker population. Unfortunately, the sample size used for screening in both of our populations was relatively small, and until we are able to gather more data, can not be considered to be statistically significant.

The past year, the American College of Obstetricians and Gynecologists, the American Academy of Pediatrics, and the American Diabetes Association sponsored the Second International Workshop-Conference on Gestational Diabetes. A unanimous recommendation from the conference was that all pregnant women be screened for glucose intolerance by serum glucose measurement between the 24th and 28th week of pregnancy. It was recommended that the nonfasting 50gm glucose load with a serum glucose determination one hour later be used as the standard screen. It was also recommended that the serum value of 140 mg/dl or greater be considered abnormal to increase the sensitivity of the screen.

The management of women with gestational diabetes remains a controversial issue. All experts agree that tight metabolic control and frequent follow-up must be observed. As a general guideline, fasting blood sugars should be maintained between 60-100 mg/dl, and one-hour postprandial levels no higher than 140 mg/dl. Weight gain during pregnancy should be limited to approximately 25 lbs., the same as the nondiabetic pregnancy. The caloric intake should be limited to 30-35 kcal/kg/day, composed of 18-20% protein, 45% carbohydrates and the balance as fats. The obese gestational nonketotic diabetic can usually be controlled safely with a reduction in calories to 25 Kcal/kg/day, in the same proportion of protein, carbohydrates and fats. To encourage compliance among the migrant population this diet should be presented with culturally appropriate foods. (Refer to Appendix for a Resource List).

Follow-up visits at the Indiana Health Center for Women with gestational diabetes are scheduled every 2 weeks until 28 weeks, weekly until 36 weeks, then semiweekly thereafter. Ideally, every gestational diabetic should be taught home glucose monitoring but in practicality this is not possible. Alternatively, fasting and one-hour post-prandial values should be checked at least every two weeks. If adequate serum glucose levels are not obtained after two weeks of appropriate diet therapy, insulin therapy should be strongly considered. Because of the risk of antibody formation, only highly purified non-beef insulin or human insulin should be used. Oral hypoglycemic agents are contraindicated during prenancy. There have been several studies, notably Coustan and Imarah, which suggest that prophylactic insulin treatment of *all* gestational diabetics significantly decreases the rate of Caesarean-sections and macrosomia associated birth trauma.

At each visit a urine dipstick for protein, glucose and nitrites should be done, along with the monthly urine cultures. This is especially important among women in the migrant population, who have a higher documented incidence of urinary tract infections. Fetal monitoring, utilizing nonstress tests (NST) should be done at least weekly after 30 weeks gestation. Golde, *et al,.* suggest that even more frequent monitoring may be necessary to assure fetal well-being in insulin-dependent diabetics. Their recommendation is that nonstress tests be done on a semiweekly schedule. All nonreactive NST's need to be followed up by a contraction stress test (CST). A NST is considered reactive if there are at least two accelerations of the fetal heart rate of 15 bpm, lasting 15 seconds, within a 20 minute time period. A CST was considered negative if three consecutive contractions in a 10 minute period were unassociated with late decelerations of the fetal heart rate. If no spontaneous contractions are evident, a sufficient amount of oxytocin is infused to simulate contractions. A postive CST necessitates delivery of the infant. Ultrasound examinations, when accessible, are helpful earlier in pregnancy to rule out congenital defects, and later in pregnancy to date gestations and to assess possible polyhydramnios. Women with diet-controlled diabetes should be delivered by 42 weeks gestation, while women with insulin-dependent diabetes should be delivered by 40 weeks.

When possible, it is advisable to have a pediatrician or neonatologist present at birth. All infants should be carefully examined for evidence of macrosomia and congenital defects, and a gestational age determination performed. All infants should have a hematocrit, glucose and calcium drawn shortly after birth. Early feedings (1/2 hour to one hour) should be encouraged for any infant with a glucose less than 40 mg/dl. Infants who remain hypoglycemic despite early, frequent feedings may need intravenous glucose until the glucose level

stabilizes. All infants need to be monitored carefully for signs of hyperbilirubinemia.

Gestational diabetes mellitus is a serious complication of pregnancy which requires early detection. The increased morbidity and mortality in diabetic pregnancies is well documented. Traditional risk factors have proven to be poor predictors of gestational diabetes. The 50 gram one hour glucose screen as described by O'Sullivan, *et al.,* has been shown to be an economical and effective screen for gestational diabetes.

The preliminary study in progess at Indiana Health Centers suggests that the rate of gestational diabetes may be higher among Hispanic migrants than in the general population. Further results will be published when available. We recommend that all women receiving care at migrant and community health centers be screened for gestational diabetes between the 24th and 28th week of pregnancy, utilizing the nonfasting 50gm, one-hour glucose screen. All serum glucose values greater or equal to 140 mg/dl require a three-hour glucose tolerance test. All women identified by the GTT as having gestational diabetes require frequent office visits with tight metabolic and dietary control, with deference to cultural dietary differences. Finally, appropriate arrangements should be considered to insure continuity of care by providing copies of obstetric medical records to the patient.

References and selected resources available upon request.

REFUGEES

HEALTH IN REFUGEE SETTLEMENTS

Prepared by the Refugee Service of the Commission on Inter-Church Aid, Refugee and World Service, World Council of Churches

Most of the world's refugees have lived, at one time or another, in a refugee settlement in a neighboring country. Fleeing violence and war, they seek safety across the nearest border. While some of these refugee migrations involve only a few families or communities, more commonly they are large-scale movements, involving thousands or even millions of people.

The health of the refugees depends on their physical conditions before fleeing, on the conditions during their flight, their adaptation to the new environment and conditions created by the camp itself. The situation which provoked the refugees' flight – such as war or famine – together with the conditions en route may exacerbate health problems endemic in rural populations. Lack of food, a long journey, and pursuit by armed groups may result in the arrival of refugees who are wounded, exhausted and malnourished (and hence more susceptible to disease).

The terror of flight is frequently reflected in a demoralized population which may further complicate the restoration of health. Moreover, the demographic composition of the refugees affects their well-being. The presence of women, children, elderly, and disabled creates special health urgencies. When refugees arrive in an environment different from that to which they are accustomed, they may be susceptible to diseases to which the local population has acquired immunity. Thus Hmong refugees arriving from their highland environment, contracted malaria in Thailand because their systems were defenseless against this hitherto unknown disease.

Decisions made about where to house the refugees are frequently made on the assumption that the refugees' presence is a temporary phenomenon – an assumption that is usually unwarranted. The location of a refugee camp is a major factor determining the health of the camp's residents. Ideally, the site for a refugee settlement should have adequate supplies of water, land suitable for farming and trees for shade, a terrain with adequate drainage for sanitation, and be well-served by roads and communication infrastructure to facilitate delivery of supplies. Unfortunately, frequently the land available for a refugee settlement is land which no one else wants – precisely because of its location and lack of resources.

The layout of the camp should reflect traditional patterns of community organization with families living together. At the same time, provision must be made for adequate water supplies, sanitation facilities, and protection against fire. Crowded conditions in camps facilitate the spread of respiratory diseases – especially among refugees already in poor physical shape.

REFUGEES CAUGHT BETWEEN CANADIAN AND U.S. LAWS

By Victoria Irwin

Proposed changes in Canadian refugee laws have caused concern among refugees and their advocates, who say the laws could strand refugees just as the new immigration laws in the U.S. take effect.

Canadian officials have said that the interim changes in their asylum procedure were necessary because of an influx of refugees from the United States.

But they contend that "genuine" refugees will not be harmed by these or future changes. Critics say the policies could greatly restrict access to the asylum process in Canada.

Earlier this year, emergency shelters in American border towns were caught by surprise when mostly Central American refugees, who flocked to the Canadian border in anticipation of tougher U.S. immigration restrictions, were left with no place to turn.