International Research Journal of Natural and Applied Sciences
ISSN: (2349-4077)
Impact Factor 5.46 Volume 6, Issue 6, June 2019
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# "ASSESSMENT STUDIES OF GLYCEMIC HEALTH IN RELATION TO HYPERIENSION AND OBESITY AMONG LATE PERODUCTIVE URBAN WOMEN"

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**INTRODUCTION**: -

Hypertensive diseases of pregnancy are serious maternal morbidities occurring in 6 % -8 % of all pregnancies. Gestational hypertension and preeclampsia are risk factors for other forms of maternal morbidities (as well as neonatal morbidity and mortality), Making these diseases of reproductive – aged women a particularly important public health problem 1,2,34,5 Women with gestational hypertension risk progession to severe hypertension, preeclampsia, or eclampsia.6,7 Women with preeclampsia are predisposed to conversions, abruption placentae, disseminated intravarcular coagulation, cerebrashemortage, pulmonary edema, renal failure and liver haemorrhage 2,5,8 Hypertensive disorders in pregnancy are alos known to be associated with an increased risk of developing by pretension and stoke later in life. The risk posed by preeclampsia to the fetus include severe growth retardation, hypoxemia, acidosis , premature birth, and death.1.6.The many risk factors for hypertensive disorders of pregnancy include null parity, multitetal gestation, Black race, extremes of reproductive age obesity, family history of preeclampsia or eclampsia, preeclampsia in previous pregnancy; presence of diabetes, thrombophiliasesdential hypertension, or renal disease 1,8,10-22, and other contextual factors (e.g residential poverty) 2022.

Few population- based studies of meternal morbidities existrecent studies have provided insight into risks of pregnancy –induced hypertensive disorders, but large subsets of the population were excluded in evaluation of socioeconomic status (SES), body mass.

Index (BMI) ,getatimal diabetes, of maternal health as cotoctors.

We investigated the socioeconomic variables and hypertensive deriders at the time of labour and delivery for a large state population over a 10 year period. Having to year of discharge data for new your state (NYS) gave us the opportunity to study the relation between maternal morbidity specifically hypertension and factors related to residential poverty and rece/ ethnicity. We separated New York city (NYC) from the rest of NYS for all analyses, because these regions differ in terms at racial/ethnic structure, population density, economics.geographic characteristic, and health care delivery system. This study provider insight into how sees and race/ethnicity may each contribute to the risk for hypertension.

Objectives: -

We studied trends of hypertensive disorders of pregnancy by residential socioeconomic status (SES) and racial/ethnic subgroups in new york state over a 10 year period.

Methods:-

Date Sources;

The NVC hospital discharge database, statewide planning and research cooperative system (Spapers), was formed in 1979 for the purpose of monitoring and Fiscally managing impatient and ambulatory hospitalization services in NYS. The Statistical variables we chose for this study Nuclide International Classification fo Disease Nineteen Revision Clinical Modification (ICD- 9-CM)[26] Codes for up to 8 discharge diagnoses (or 15 diagnoses if the patient was discharged in 1994 or later),demoigraphic information Leg,race ,ethnicity, age),type of medical pursuance and zip code of residence.

From the us census Bureau we obtained 2000 usCesusdatea at the zip code tabulation area (ZCTA) Level from Summary File 3 [27] ZCTA'S are geographic Units meant to Approximate the boundaries of postal zip Codes and comprise groups of census blocks.

Cases: -

Between 1993 abd 2002, 3120329 acute care hospital discharge in NYS had a pregnancy – related diagnostic, precdeure, or diagnostic – related grouping ICD-9-CM Code [25.]We selected records with codes for a delivery, excluding 417 279 hospitalised of pregnant women for reasons

other than delivery. We excluded hospitalizations if we could not obtain residential information because the woman resided outside NYS (n-50,897),or was incarcerated (n-2145).

The zip code was changed or removed by the post office during the study period (n=5020) or was otherwise unmatched with 2000 US Census date (n=1385),or no poverty information was available for the zip code (n=131). We also excluded hospitalisations if the woman was younger than is or older than 54, or if age was missing (n=34673),finally,we excluded those hospitalisations where the women had a pregnancy terminated by miscarriage or spontaneous or induced obtion (n=29467) had a diagnosis of HIV or AIDS (n=p242,or had a diagnoses of both type 1 and type 2 diabetes (n=26). The final study sample unlisted of 2571069 (95 % of total records with codes for a delivery) hospitalizations with delivery.

We assessed 5 hypertensive outcomes:essential hypertension (pre-existing hypertension), gestational hypertension, preeclampsia, severe preeclampsia and edampsia, and preeclampsia or eclampsiasupermposed on pre-existing hypertension, severe preeclampsia and eclampsia and similar risk distribution and were unbin into 1 group to stabilize estimates. Case definitions for hypertension were based on the ICD-9-CXM) Codes recorded as discharged, danglesessential hypertension (6420,6421,64.2.2,642.9) gestational hypertension (644.3), preeclampsia (612.4), severe preeclampsia and eclampsia (642.5,642.62 and preeclampsia or clampsia superimposed on pre-existing hypertension (642.7).

When multiple diagnoses for preeclampsia, severe preeclampsia, or clampsia, were, listed, we categories the hospitalization as the most serve form record for other combinations of hypertension; we counted the hospitalization in each applicable category. Race/ethnicity and residential poverty.

Hospital discharge records contained information on the patient's race and ethnicity lie. Hispanic or non his pond. If Hispanic ethnicity was identified , if was maintained as the race/ethnicity of the patient if a patient was indetified as non-hispanic, her race was categorized white (white),or non- Hispanic other race (other).

Neighbourhood poverty levees was measured as the percentage of residents within ech . ZCTA Living beglowthe tenders poverty line. This exposure was pituitary categorised into 6 groups:<2.5 %,256-4.99%,

5 % 9.99 % 10 % -14.99 % 15 %256.4-99 % and > 20 % lie. Federally detined poverty areas 28,29. Because of the small number of hypertexts hospitalizations in same upsets of

race/ethnicity and neighbourhood poverty, these 6 categories were condensed into 3 groups for the analyses: <10 % -1999% and 220 % .20. Bias assessment identified no substantive residual confounding.

Potential confounders and effect

Modifiers

Diabetes, considered a likely effect modifier, was categorized into 4 groups type 1 diabetes, type 2 diabetes, gestational diabetes, and no diabetes, we further investigated the combination of gestations and type 2 diabetes, because diabetes diagnosed during pregnancy is often though to be type 2 diabetes that is identified through prenatal testing.30 Definitions for diabetes were based on ICD-9-CM codes as follows: type1diabetes (250,250.0,250.1,250.2,250.3,250.4,
250.5,250.6,250.7,250.8,250.9,250.01,250.03,type2
diabetes(250.00,250.02,250.10,250.12,250,20,250.22,250.30,250.60,250.62,250.70,250.72,250.80,250.82,250.90,250.92) and gestational diabetes (648.8).

We obtained information about each patient's age and type of medical assurancefrom hospital discharge records age was categorized into 5 groups,15 to 17 ,18 to 19, 20 to 34, 35 to 44, and 45 to 54.Medicated status was defined as being insured by Medicaid or enrolled in a Medicaid health maintance organization .Because having no health insurance usually indicated both low income and delayed application to Medicaid for pregnant women, 31. We combined women whose discharge records indicated self-pay as the method of payment (5 %) with women whose services were covered by Medicaid for our analyses.

Finally, we strafed all analyses in the study by the geographic region of residence as indicated by the country of residence on the hospital discharge record.

NYC included the city's counties Bronx,Kings (Brooklyn), New York (Man nation Queens, and Richmond(State Island) NYS included all other counties grouped together.

Date Management and Statistical Analysis.

We conducted all data management and statistical analyses using UAS Software Version 8.2 (SAS Institute in Cary NC).We linked hospitalization record zip code data with us census ZCTA Data. We calculated hospitalization rates for each of the S hypertension outcomes by combinations of race/ethnicity and residential poverty level and by diabetes and demographic factors. We assessed the 10 year trends of hospitalization rates with hypertensive disorders

overall and separately for combinations of age group, region, racial/ethnic group,and diabetes status.unducted stratified analyses for rates of hospitalization with delivery by diabetes status, region, racial ethnic group, age group, and residential poverty level. We calculated rate rations for combinations of exposure factors and effect modifiers using both stratified analysis and logistic regression. Hereafter , the term rate refers to number of events per 100 hospitalizations with delivery unless otherwise stated.

**Results**

The rates of gestational hypertention preeclampsia, and eclampsia were highest in both the youngest (15 to 17) and the oldest (45 to 54) women, whereas mcreased age was positively associated with the rate of essential hypertension (table 1). Women with a diagneies of diabetes (gestational, type 1, or type 2) had increased rates of diagnoses for all forms of hyperterm studied compared with these without diabetes diagnoses.

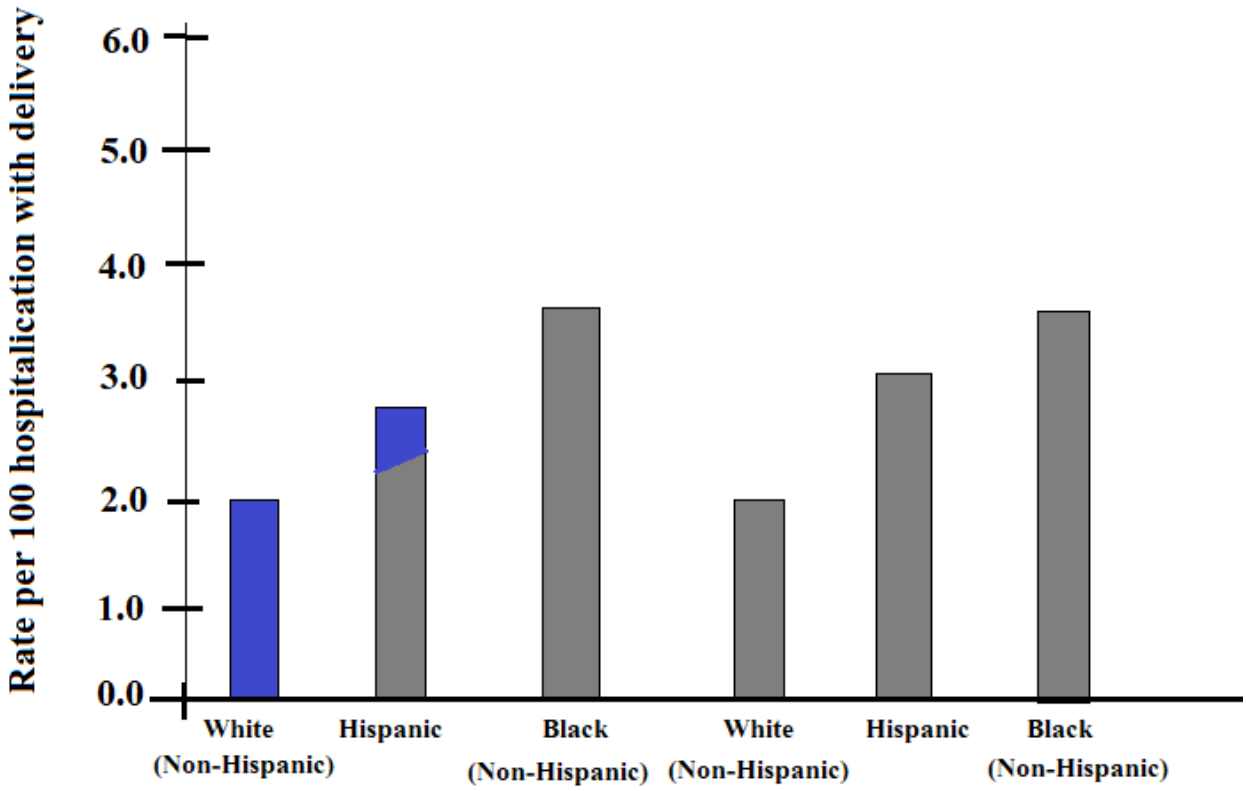
Women with diagnests of type 1 diabetes were most likey to have diagnetes of all forms of hypertension except essential hypersion (Table1)

Table 1 – Rates of Hypertensive disorders during pregnancy : New York state , 1993-2002

| | | Essential | Gestatimal |
|---|---|---|---|
| | N | Hypertension | Hypertension |
| Mcidence | 2571069 | 1.2 | 1.5 |
| Age Y | | | |
| 15-17 | 80550 | 0.6 | 1.8 |
| 18-19 | 143128 | 0.6 | 1.6 |
| 20-34 | 1915272 | 1.0 | 1.5 |
| 35-44 | 427-932 | 2.4 | 1.8 |
| 45-54 | 4187 | 5.6 | 3.1 |
| | | | |
| Racelehnicity | | | |
| White | 1297 460 | 17 | 1.8 |
| Other | 512 653 | 1.1 | 1.2 |
| Hispanic | 310 858 | 0.9 | 1.2 |
| Black | 950 098 | 2.1 | 1.5 |
| | | | |
| Location | | | |
| NYC | 1206454 | 1.3 | 1.1 |
| NYS | 1364615 | 1.2 | 2.0 |
| | | | |
| Medicard recipient | | | |
| No | 1054 022 | 1.2 | 1.8 |
| Yes | 1547 047 | 1.2 | 1.4 |
| Type Edibetes 3509 | | 9.6 | 2.7 |
| Type diabetes 6772 | | 8.1 | 3.5 |

| | Preecmpsia | Severe |
|---|---|---|
| | Superinposed | Preclersia |
| | On pre-existing | and |

| Preeclampsia | Hypertension | Eclapsia | Total |
|---|---|---|---|
| 2.4 | 0.3 | 0.8 | 6.1 |
| 4.3 | 0.2 | 1.3 | 7.9 |
| 3.5 | 0.2 | 1.1 | 6.6 |
| 2.2 | 0.3 | 0.8 | 5.6 |
| 2.4 | 0.7 | 1.0 | 7.9 |
| 5.0 | 2.0 | 2.1 | 17.2 |
| | | | |
| 2.0 | 0.2 | 0.7 | 5.5 |
| 2.3 | 0.3 | 0.9 | 5.5 |
| 3.0 | 0.3 | 1.0 | 6.2 |
| 3.3 | 0.7 | 1.2 | 8.5 |
| | | | |
| 2.8 | 0.4 | 0.9 | 6.3 |
| 2.0 | 0.2 | 0.8 | 6.0 |
| | | | |
| 2.0 | 0.3 | 0.8 | 5.9 |
| 2.6 | 0.3 | 0.9 | 6.3 |
| 5.4 | 2.7 | 2.1 | 21.2 |
| 7.9 | 2.6 | 3.6 | 24.5 |




n=142181 n= 551% n=569 n=83 605 n= 112132 n=143291

No diabetes, residential poverty = 0% - 19.99% | No diabetes , residential Poverty ≥ 20%

Residential poverty level and race/ethnicity

Analyses assessing associations between racel ethnicity and residential poverty with hypertension residential poverty with hypertension hospitalization showed similar results for preeclampsia and for all hypertension combined. For simplicity and clarity, we have chosen to present results focused on preeclampsia rates and will state when results varied for other hypertensive diagnoses.

Anngnondiabeties, differences in preeclaimpsia rates by race emicity were pronounced in NYC, with higher rates anmg Black women (3.2) and Hispanic Women (1.8), regardless of netghbour head poverty level. Only amng Hispanic women did a dear bssociation exist between nighbourhead poverty level and preeclampsia rate.

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Review of literature –
We found increasing racial disparities in maternal hypertension rates over the past decade in NYS. This finding was strengthened when further analyses focused specifically on preeclampsia hospitalizations among mondibetc women aged 20 to 34 to remove potential confounding associated with age, diabetes status, and mixed forms of hypertension. Net only did higher rates of preeclampsia exist among black, women hospitalized with delivery than among white women, but this difference appeared to be increasing over the same time period, the rate of hospitalization with delivery for women living in poor areas remained relatively constant within racial/ethnic groups and geographic regions (data net shown); this partially removes changes in SES as a cause of the increasing disparity. Preeclampsia rates were much higher in NYC than in the rest of NVS for Black and Hispanic women, but net for white women. Our study could net fully explain the greater racial ethnic disparities in rates of preeclampsia and all hypertensions combined in NVS by the Material characteristics we studied.
One possible explanation may be that disparities across social gradients are greater in major urban areas. Our assessment of the association between preeclampsia rates in urban areas outside NYC showed relatively similar rates in rural and urban regions. No clear trends among black and Hisganic women across rural areas could be assessed because of the small population sizes outside cities. Evaluation of differences in diagnostic rates for the largest hospitals in each regin ruled out a second possible explanation.