Abstract

This study was done on 197 pregnant women. Fasting plasma total homocysteine (tHcy) was measured in each woman at 16th week of pregnancy. They were divided into 2 groups according to development of preeclampsia. Women who did not develop preeclampsia (n = 179) comprised control group. Women who developed preeclampsia (n = 18) comprised the study group.

Fasting plasma tHcy at 16th week gestation was significantly higher in preeclampsia group compared to control group (P<0.05). Also the number of cases with tHcy ≥ 90th percentile of controls (≥5.37 ng/dL) was significantly higher in preeclampsia group compared to control group.

It can be concluded that hyperhomocysteinemia at 16th week gestation may be an indirect risk factor for placental vasculopathy predicting preeclampsia.

Introduction

Homocysteine is not present naturally in the diet, but it is an essential intermediate in methionine metabolism. Each component of the methionine cycle (methylcobalamin, methionine, homocysteine, and cysteine) is the precursor of the other and the synthesis of one is the mechanism of detoxification of the other. Hyperhomocysteinemia, a known vascular disease risk factor, is associated with placental vascular syndromes of preeclampsia, placental abruption, thrombocytopenic
mass index (BMI).

blood pressure and body

turning a breath test internal
domestic examination to de-

2. Complete general and ab-
defect
defect or congenital heart

offspring with neural tube
cancer or of having an

spectral history of prec-

I. Full history taking, with ref-
supposed to the following:

All study participants were

the 16th week of gestation

accepted to give blood samples at

hospital and
taking the antenatal care until

want women recruited from those

This study comprised 197 pre-

Subjects and Methods

decision of pre eclampsia.

no increase determination in pre-

high demonstration a value for no

pre eclampsia. Such a finding

nosis precede the development of
determine if homocysteine eleva-

The aim of this study was to

Aim of the Work

mean death in utero (Wang et al,

Serensen et al., 1999, Helle et

Fetal death in utero (Wang et al,

Intrauterine Growth Retardation or

events, and/or fetal syndromes of

1997).
2. Urine analysis for the press.

Perfusion

edema and occurrence of lymphedema of lower limbs in respect to the occurrence of puffy ankles and morning swelling.

1. General examination: with

monthly: [full sentence not visible]

between baseline data collection and observation phase follow up period (2) test hypoxic-metabolic response. The hypoxia index 2.7 ng/dl were considered as the upper normal plasma level.

2.00 ng/dl total plasma homocysteine (Hcy) (Naiman et al., 2009) as of total homocysteine measurement baseline plasma level stored at 80°C for 60 days and blood samples were collected.

B. Blood samplings: Various by immunochemical method.

Luteal phase urine analytes.

4. Laboratory investigations:

led congenital abnormalities.

1. Complete urinary tract in

3. Ultrasoundographic examination:

Luteal phase urine analytes.

2. Luteal phase abnormal.
ion between fasting plasma hleas was a significant positive correlation. In preeclampsia group, there was a significant positive correlation (level of hleas > 5.97 mmol/L) of cases with hypertonia.

1. Comparing both levels of hleas and comparing groups re-.
   - There was statistically significant difference between pre- and post-pregnancy hleas. The level at 16th homocysteine (Hcy) levels showed the fasting total homocysteine levels.

2. Development of preeclampsia.
   - Of 18 women, 79% who developed preeclampsia during the follow-up period (6 weeks after delivery) were allocated into two groups:
     1. Control group (Group I): 1799 women, who completed the follow-up period without the development of preeclampsia.
     2. Preeclampsia group (group II): 18 women, who were retropectively allocated into two groups:

   - At the end of the follow-up period.

   - After 20th weeks gestation, at least 2000 minutes of blood pressure of ≥ 140/90 mmHg were diagnosed with significant correlation.

   - For all, a correlation coefficient r was estimated using Pearson’s correlation coefficient. For all, a correlation coefficient r was estimated using Pearson’s correlation coefficient. The correlation coefficients were analyzed by Z-test. Correlations were analyzed by number and percent.

   - The paired t-test variables were analyzed by number and percent. The Pearson correlation was significant at 0.05.

   - For follow-up period.
<table>
<thead>
<tr>
<th>d</th>
<th>Group I (control)</th>
<th>Group II (preclampsia)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>20%</td>
<td>11.2%</td>
<td>11.8%</td>
<td>0.05</td>
</tr>
<tr>
<td>9%</td>
<td>11.3%</td>
<td>11.3%</td>
<td>0.05</td>
</tr>
<tr>
<td>3%</td>
<td>11.3%</td>
<td>11.3%</td>
<td>0.05</td>
</tr>
<tr>
<td>1%</td>
<td>11.3%</td>
<td>11.3%</td>
<td>0.05</td>
</tr>
<tr>
<td>0.5%</td>
<td>11.3%</td>
<td>11.3%</td>
<td>0.05</td>
</tr>
<tr>
<td>0.05%</td>
<td>11.3%</td>
<td>11.3%</td>
<td>0.05</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hypertensive syndrome (≥ 130/90 mmHg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level (µ/dl) Mean ± SD</td>
</tr>
<tr>
<td>Group I (control)</td>
</tr>
<tr>
<td>Group II (preclampsia)</td>
</tr>
</tbody>
</table>

Table 2: Fasting plasma Hcy levels at 16th week of pregnancy.

N' D: SBP and DBP values at 37th completed gestational age.

Significant versus baseline:

Follow up,

Baseline

DBP (mmHg), mean ± SD:

122 ± 6.4
122 ± 6.4

Baseline

SBP (mmHg), mean ± SD:

28.6 ± 3.1
28.6 ± 3.1

BMI, mean ± SD:

1.6 ± 0.04
1.6 ± 0.04

Height (cm), mean ± SD:

176.0 ± 7.1
176.0 ± 7.1

Weight (kg), mean ± SD:

28.6 ± 2.8
28.6 ± 2.8

Age (y), mean ± SD:

23.1% ± 7.8%
23.1% ± 7.8%

Table 1: Study women's characteristics.

plasma Hcy levels at 16th week of pregnancy (≥ 5.37)

hyper correlation between fasting plasma Hcy levels and preclampsia.

study, all have plasma level of hyper Hcy levels in preclampsia group.

BMI and preclampsia, age, severity of preclampsia, age, severity, smoking, and occurrence of preclampsia.
<table>
<thead>
<tr>
<th>Parameter</th>
<th>Occurrence of preeclampsia</th>
<th>Severity of preeclampsia</th>
<th>Age</th>
<th>BMI</th>
<th>Parity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>0.001</td>
<td>0.01</td>
<td>0.088</td>
<td>0.006</td>
<td></td>
</tr>
<tr>
<td>&quot;r&quot;</td>
<td>0.417</td>
<td>0.868</td>
<td>0.495</td>
<td>0.509</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Correlation coefficient "r" between fasting plasma level of tilcys and some parameters in preeclampsia group.

Fig. 1: Correlation coefficient "r" between some parameters and fasting plasma level of tilcys (ng/dL) in preeclampsia group.
Levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in pregnancies maternal plasma homocysteine levels were higher in preg

Discussion
maternal age and fasting plasma
significant correlation between
present study showed a positive
preeeclampsia. Moreover, the
present study showed a positive
6.9 times more likely to develop
out homocysteine elevation. were
patients. In heterozygous women with-
who also had the
mass index and who had also had the
that women with a higher body
reason or both, (19961) who found
agreed with those reported by 50-
preeeclampsia group. These results
increased homocysteine level and BMI in
cystine and fasting plasma level hom-
two-week fasting plasma level hom-
the significant correlation be-
study, also, showed a pos-
both with increased habitual abor-
homocysteine has been associated
presence of increased maternal
son (2000) who reported that the
results agreed with School & John-
recent prenatal history. These
women with multiple pregnancies in the three-
showed also an increased fasting
The results of the presen study
Table 1: Valu-
without local homocysteine ele-
compared with multiple pregnancies wom-
fold increase risk of preeeclampsia
plasma level of local hom-
results with School & et al. (1996)
preeeclampsia group. These results
maior homocysteine level in
and fasting plasma level. The
ance of local homocysteine ele-
many studies, the fasting plasma level
are significant correlation be-
This study shows a neg-

Cysteine level experienced 9.7-
who reported that multiparous
afteee with School & et al. (1996)
preeeclampsia group. These results
with local homocysteine ele-
tween parity and the fasting plasma
are significant correlation be-
Cysteine level experienced 9.7-
Sytet of delivery factors on hom-
increased homocysteine. There is a possible
they studied non-fasting levels of
to the fact that
study and that of Hiller et al. al
in contrast between the present
did not appear to be a reliable pre-
concluded that homocysteine level
maintained normotensive. So, they
preeeclampsia and those who re-
two women who later developed
levels at 16 weeks gestation be-
demonstrated that there was no
demand in women homocysteine
other hand, Hiller et al. (2001)
men of control group. On the
increase in women of preeeclampsia-
moecysteine showed a significant
control values.
References

The Rebel use of the pelvic prophylactic test for clinical
manifestation of pre-eclampsia could be a useful
measure of pre-eclampsia in early midtrimester of pregnancy.
more studies are needed.

Hypertension can be an indicator of risk for preeclampsia. The Rebel showed that hypertension
The results of the present study

Conclusion

Sta with increasing maternal age.-
fold increased risk of preeclampsia-
levels were associated with 3.2
levels of homocysteine. All second
level homocysteine level. Sorenson


