<table>
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<th>Title</th>
<th>Brazilian woman who underwent cesarean section in Japan: How to overcome complications, communication gap, and cultural/medical differences in perception</th>
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<tr>
<td>Author(s)</td>
<td>Maeno, Mami / Kamada, Hiromi / Sakuyama, Mika / Yoshimi, Kana / Motoyama, Satoru / Matsuo, Hiroya</td>
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Sometimes medical staffs will find difficulties in providing health care to foreign patients residing in Japan. There exists a language barrier, and different ideas between cultures toward health and diseases. We report a case which pregnant Brazilian woman who had cesarean section due to the complications of pregnancy including hypertension (PIH) and gestational diabetes mellitus (GDM), and whose baby was followed up in a pediatric ward for further examinations. Medical staffs had to convince not only patient but also the family to proceed with its treatment. The overview of foreign pregnant woman with complication is to be understood thoroughly for its betterment of medical care to foreign patients.

Key Words
Cesarean section, gestational diabetes mellitus (GDM), pregnancy, immigrant, language barrier.

Introduction
The statistics of Immigration Bureau show that there are 2,22 million registered foreigners residing in Japan, as of the end of year 2008¹, occupy 1.74% of total population.

Especially, “new-comers” from South East Asia or South America are remarkably increasing, who are very often married to Japanese spouse or born to a mixed Japanese/non-Japanese couple². The reproductive aged female accounts for about 60% of the whole female immigrants. They play important roles in society as workers and wives.

However, rates of mortality or morbidity in maternal and child health of the new comers are worse than those in Japanese nationals³. Language barriers and difference in culture may become an obstacle to an appropriate health care. Language barriers induce misinterpretation even if translated⁴, ⁵. Foreigners from Latin America are tend to speak only their mother language and are able to speak neither Japanese nor English. As a consequence, they tend to have wider communication gap compared to other foreigners. According to the associations of medical doctors of Asia (AMDA) international medical information center, there were 4000 medical consultations in 2006, of which about 600 cases were from Brazil-
ian and 350 cases were from Peruvian\(^6\). It is determined that people from Latin America are one of the vulnerable people to receive medical care in Japan.

After we acquired the consent from the patient and hospital, we had an opportunity to follow-up a Brazilian woman (X) whose delivery has resulted in cesarean section with complications of pregnancy included hypertension (PIH) and gestational diabetes mellitus (GDM). Thus, we evaluated what kind of factors affected the prognosis of the pregnancy and delivery from the points of view of both medical staffs and patient.

**Case Report**

X was 22 years old and married, and has been staying in Japan for 6 years. Her Japanese speaking ability was babble, which means she was able to speak easy words and have easy conversations. Though X had supports from husband, mother, and sister, they were not good at speaking Japanese either. X was originally from Brazil and spoke Portuguese as her mother language (Table 1).

X’s time of the last menstrual period started from March 16th to 21st, and became amenorrheic as being diagnosed as pregnancy. She was a primipara whose early time of pregnancy was followed up in Brazil, and later on in Japan from 24w5d of pregnancy. X’s pregnant process is shown in table 2. Her body weight before pregnancy was 92 kg. Although there was DM family history, X had never been mentioned of high blood sugar level. X was diagnosed as PIH at 24w5d of pregnancy and GDM at 36w1d of pregnancy. Her usual blood pressure was 110-130/56-70mmhg measured at home. She was prescribed hydralazine (30mg/day) at 24w5d of pregnancy in Japan. As her pregnancy proceeded, glucosuria increased up to 4+ compared to that of her first visit to hospital in Japan at 24w5d of her pregnancy. Laboratory data such as fasting blood sugar level and HbA1c level showed 114~146mg/dL and 6.6~7.2% respectively. She was also followed up by internal medicine department, but the doctor only referred about salt limitation as a daily diet, and no diet therapy by dietitian was done. After getting a dietary suggestion by the doctor, she changed her eating habit by reducing amount of salt used for food. But she didn’t change quantity of eating, which was 4 times a day. She recognized its importance of dietary treatment and said it was significant for her.

For having a complicated pregnancy, X had an induced labor at 37w3d of pregnancy. But after that, cesarean section was performed due to the weak progress of labor which was diagnosed as an obstructed labor. Being obesity (158cm, 116kg, BMI=46.47) and GDM, anesthetist classified her

<table>
<thead>
<tr>
<th>Table 1. Patient’s background</th>
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<tr>
<td>Age (Year)</td>
</tr>
<tr>
<td>Nationality</td>
</tr>
<tr>
<td>Mother language</td>
</tr>
<tr>
<td>Marital status</td>
</tr>
<tr>
<td>Religion</td>
</tr>
<tr>
<td>Family structure</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Stay in Japan (Year)</td>
</tr>
<tr>
<td>Japanese speaking</td>
</tr>
<tr>
<td>Parity</td>
</tr>
<tr>
<td>Height (cm)</td>
</tr>
<tr>
<td>Body weight before pregnancy (Kg)</td>
</tr>
<tr>
<td>BMI (Kg/m2)</td>
</tr>
</tbody>
</table>
Brazilian Experiencing C-Section

physical status (PS) as class 3 before operation. Emergency operation was done at 37w4d of pregnancy. Its outbalance and inbalance were; blood loss 700ml, urine 170ml, and infusion 1350ml. No anemia treatment was done. The laboratory data during operation was as follows; Hb13.0mg/dL, Ht41.1%, WBC7600/μL, PLT18.9×10^4/μL, TP6.6g/dL, Alb3.8g/dL, T-bil0.4mg/dL, GOT22IU/L, GPT14IU/L, Cr0.51mg/dL, BS144mg/dL, proteinuria1+. At post operation, the laboratory data showed; WBC6700/μL, Hb11.0mg/dL, Ht32.6%, CRP15.40mg/dL.

X’s baby, Y, weighted 3980g when was born, with Apgar score 5/8. Y had hospitalized 9 days in pediatric ward for further cardiac examinations. Furthermore, Y had transient tachypnea of neonate (TTN), which is a kind of defect in respiratory system. Y’s blood sugar level was 20mg/dL at first but gradually improved.

At post operative time, she was asked to measure blood sugar before every meal. But once, she had eaten dinner before checking. For pain control, she asked for stronger medicines whereas at the hospital usually used Calonal. She was infused Ropion twice at the second day of operation, and was prescribed Loxonin at the third day.

Discussion

There are three phases to discuss about the case including during pregnancy, during delivery, and after delivery. Each phase has its typical problem of language barrier and misunderstanding.

There was different medical idea or belief which influenced on nutrition intake during X’s pregnancy. X’s weight increased 7kg since 24 weeks of pregnancy. In addition, glucosuria level got higher. As a Brazilian food, they contain a lot of salt and calories. Dietary intake during pregnancy in Brazil according to skin color was reported, that during pregnancy, black mulatto women had 13.4% and 9.1% higher energy intake and 15.1% and 10.5% higher carbohydrate intake than white women, respectively. X is not the only case, but this report indicates that an excessive dietary intake usually happens in Brazilian pregnant women compared to those of white. In Pre-eclampsia treatment, proper intake of salt amount is 7~8g/day, and as for protein (ideal body weight) ×1.0g/day. It seemed to be performed an insufficient diet therapy during X’s pregnancy. According to X, she only reduced amount of salt but not its food amount. In the meantime, other medical staffs didn’t confirm how her daily diet was. If some confirmations were made on X’s daily diet, X might have changed its eating habit which would have reduced her pregnancy risks and symptoms such as headache and respiratory problems caused by PIH and GDM. Health guidance including nutrition treatment absolutely needs patient’s comprehension. In case of those foreign pregnant women who have complications, more communications and confirmations between other departments are needed. It is crucial to recover a language barrier and give enough comprehension to foreign patients as much as possible.

Dr Z, who was in charge of X, experienced some inappropriate communications which were expected to have caused by a language barrier. X knew that she had hypertension and needed to take medicine. But X explained to Dr Z that X was taking a pediatric antipyretic and some vitamin supplements. Dr Z wasn’t sure what X was really taking for her hypertension treatment, so Dr Z prescribed medicines to normalize her blood pressure.

When X had induction of labor and didn’t proceed well, her husband was worried about the baby’s condition. So he intended a cesarean section to be preformed to X. Since X had complications of PIH, GDM, and premature rupture of membrane (PROM) due to an aminiotomy (artificial rupture of membrane), doctors suggested X to have a normal labor from the aspect of prevention from infection and bleeding. Fetal macrosomia may be associated with shoulder dystocia and birth injury, particularly in the broad-shouldered infant of a diabetic mother, cesarean delivery without a trial of labor has been advocated in cases in which macrosomia is evident. X’s percep-
tion toward delivery was, “My labor was induced because of high blood pressure, diabetes, and the baby being very large. When baby’s heart beat wasn’t heard well during induction, my husband was worried and asked for a cesarean section. I have always thought on natural childbirth, but for not having a good expansion and no pain, I had to do a cesarean section. The next time I would prefer cesarean section, since I have either no facility to have a normal delivery nor don’t want to take a risk as happened with my baby.”

This was one of the causes which led X to a cesarean section. Brazilian women in Japan recognize that natural vaginal delivery is more preferable than cesarean section, and they don’t have negative feelings toward normal delivery\(^9\). Since some decisions are made not only by patient but also by family, translation is needed to be done enough for the surroundings. As delivery is such an important event to the family, medical staffs need to integrate all ideas and desires of the family members. Some tools to integrate their perceptions and readiness should be promoted during the pregnancy.

At the post operative times, there existed mistakes. Because she didn’t fully understand how to measure blood sugar by herself, she has once skipped form checking it. Nurses had to make sure again to measure before eating. When patient can’t speak Japanese, nurses tend to confirm their explanation by patient’s attitude or comments. This shows how difficult and important it is to confirm information between medical staffs and foreign patients.

Clinical differences between ethnicity are found and discussed in many reports. Different clinical outcomes exist between natives and non-natives\(^10,11\). Non-natives are in worse health conditions from the beginning of hospitalization. Even if communicated, it is difficult for them to obtain enough information and knowledge about their diseases\(^12,13\). Recent study found that social economic status (SES) is strongly associated with how patients choose their treatment methods\(^14,15\). It is essential for medical staffs to understand how patient backgrounds (including SES) are. Knowing and not knowing makes such a big difference in providing medical care to non-Japanese patients. Let patients do what they think is important for them, not forcing Japanese common sense or what is believed in Japanese culture.

### Table 2. Patient’s pregnant process

<table>
<thead>
<tr>
<th>Course of pregnancy</th>
<th>24w5d</th>
<th>26w5d</th>
<th>30w1d</th>
<th>32w1d</th>
<th>34w1d</th>
<th>36w1d</th>
<th>37w1d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundus uteri(cm)</td>
<td>27</td>
<td>31</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td>Abdominal measurement (cm)</td>
<td>124</td>
<td>124</td>
<td>127</td>
<td>130</td>
<td>130</td>
<td>131</td>
<td>130</td>
</tr>
<tr>
<td>Weight(kg)</td>
<td>108.1</td>
<td>108.1</td>
<td>109.7</td>
<td>110.6</td>
<td>112.6</td>
<td>113</td>
<td>115.2</td>
</tr>
<tr>
<td>Urine</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protein</td>
<td>-</td>
<td>±</td>
<td>-</td>
<td>-</td>
<td>±</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Glucose</td>
<td>-</td>
<td>1+</td>
<td>-</td>
<td>2+</td>
<td>3+</td>
<td>4+</td>
<td>1+</td>
</tr>
<tr>
<td>BP (mmHg)</td>
<td>142/80</td>
<td>139/83</td>
<td>142/83</td>
<td>140/82</td>
<td>137/79</td>
<td>137/78</td>
<td>146/90</td>
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<tr>
<td>FBS (mg/dl)</td>
<td>115</td>
<td>146</td>
<td>114</td>
<td>6.6</td>
<td>7.2</td>
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References


