INTRODUCTION:

Childbearing and rising of children are extremely important events in every human’s life and are strongly associated with the ultimate goals of happiness and family integration. Infertility is defined by an unsuccessful waiting time to pregnancy of 12 months, despite frequent unprotected intercourse.[1]

One in six couples is subfertile[2] while only a proportion of them would seek medical treatment.[3][4] According to recent studies by the WHO approximately 8-10% of couples are facing some kind of infertility. Globally, this means that 50-80 million people are facing the problem of getting an integrated family.[1,5,6] Infertility may have far-reaching consequences, including marital conflicts, violence, stigmatization, isolation and divorce.[7] Infertility mainly classifies in two types: primary infertility is the term used to describe a couple that has ever been asked to conceive a pregnancy, secondary infertility is the term used to describe couples who previously been pregnant at least one, but had not been asked to achieve another.[8]

Infertility could result from a wide spectrum of causes which found in either partial or sometimes in both[9]

There are lots of etiological factors in either partner, whereas ovulatory dysfunction is the most common cause of female factor, other factors are fallopian tube blockage, congenital abnormalities or acquired abnormalities and pelvic pathologies.[9] No abnormalities could be detected after investigations and it termed as “unexplained infertility.”[10]

Knowing of the causes of infertility would be useful for the treatment to physicians to plan the management and take knowledgeable treatment. In Sri Lanka up to now lack of studies conducted to elucidate the risk factors of infertility. Therefore the aim of the study was to rule out the risk factors/causes of infertility at National Ayurvedic Teaching Hospital, Borella, Sri Lanka.

Materials and Methods:

This study was conducted at National Ayurvedic Teaching Hospital, Borella, Sri Lanka between the periods of February 2015 to March 2016. The inclusion criteria of the study are female age between 18-45 years, participants should be de-facto marriage with primary and secondary infertility. The exclusion criteria are...
separate couples more than 6 months and divorced. The study was selected on 782 with the causes of infertility who visited the gynecology clinic, but after inclusion 635 participants are included the final study.

For data collection a specially designed questionnaire was used for the purpose of the research. The questionnaire included demographic data and the questions related to factors causing to infertility like; previous fertility problems, gynecological diseases, surgical history, life style, personal history, coital history etc. When necessary participants were assessed for ovulation (only TVS), hormonal (TSH, FSH, LH, prolactin and testosterone), further some selected causes tubal patency were recorded.

The study approved by the Director, National Ayurveda Teaching Hospital, Borella, Sri Lanka. All the participants were informed by the consent form that their participation is voluntary and their name and knowledge will be kept anonymous.

Results:

Out of 782 participants, 147 (18.79%) were excluded from the study due to various reasons.

The demographic and anthropometric characters of the study participants are presented in table 1. The mean ± SD of age of women was 36.2± 71 years. Approximately half of the population had upper grade level of education (53.85%) and 3.46% of women were illiterate. BMI between 25-29 Kg/m² was observed 49.13% population and overweight was observed in 29.76% population.

### Table 1: Demographic data of the participants (n=635)

<table>
<thead>
<tr>
<th>Character</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (in years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-27</td>
<td>202</td>
<td>31.81</td>
</tr>
<tr>
<td>28-37</td>
<td>236</td>
<td>37.16</td>
</tr>
<tr>
<td>38-45</td>
<td>197</td>
<td>31.02</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Illiterate</td>
<td>22</td>
<td>3.46</td>
</tr>
<tr>
<td>Lower grade</td>
<td>80</td>
<td>12.59</td>
</tr>
<tr>
<td>Middle grade</td>
<td>147</td>
<td>23.14</td>
</tr>
<tr>
<td>Upper grade</td>
<td>342</td>
<td>53.85</td>
</tr>
<tr>
<td>University</td>
<td>44</td>
<td>6.92</td>
</tr>
<tr>
<td>BMI (Kg/m²)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;24</td>
<td>134</td>
<td>21.10</td>
</tr>
<tr>
<td>25-29</td>
<td>312</td>
<td>49.13</td>
</tr>
<tr>
<td>&gt;30</td>
<td>189</td>
<td>29.76</td>
</tr>
<tr>
<td>Types of Infertility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary infertility</td>
<td>432</td>
<td>68.03</td>
</tr>
<tr>
<td>Secondary infertility</td>
<td>203</td>
<td>31.96</td>
</tr>
</tbody>
</table>

The result of the present study showed that the most common cause of female infertility was anovulatory cycle as 31.18%, while the second most common cause was the infertility by menstrual irregularities (19.21) and the third most common was sexual abnormalities as 14.48%. Then idiopathic (12.74%), uterine abnormalities (11.33%), fallopian tube blockage (7.40%) and finally cervical abnormalities was 3.62%.

Discussion:

Infertility is a widely emerging problem with much prevalent condition that has profound socio-economic and health consequences on couples as well as the society. The incidence of infertility varies greatly in different countries and regions. Approximately 167 million married women aged 15-49 years in developing countries were infertility.\[11\] In this study the most common cause of infertility was anovulatory cycle (31.18%). This could be due to high prevalence of poly cystic ovarian syndrome as modern life and dietary factors. This observation accordance with Nestle JE et al.\[12\]

Further in this study we found that infertility was more common in upper grade (53.85%) this may affect the increasing age, which finally depleted the production of ovulation. Menstrual irregularities were the second most cause. The reason behind that, the function of the thyroid gland was directly affected the function of the hypothalamic-pituitary gland and ovarian hormones which leads to amenorrhoea. This findings can be correlated with Speroff L et al and Sepaniak S et al.\[13,15\]

The curiosity area of this study was the assessment of sexual function among couples, commonly this was
neglected in both research and clinical management during infertility. Abnormalities in sexual function were seen in 14.48 % of our findings. There are several reasons for abnormal sexual abnormalities were infrequent coitus due to temporary absence of either partner due to occupation, work load, late sleep due to watching TV programmes till late night. The other causes of sexual dysfunction were some other male factors like erectile dysfunction, ejaculatory problems etc.

According to WHO the categories of BMI suggested for Asian are; < 18.51Kg/m² (underweight), 18.5-23.0Kg/m² (Normal), 23-27.5 Kg/m² (overweight) and > 27.5Kg/m² (obesity).[15] In our study the BMI between 25-29Kg/m² percentage was 49.13%, which indicates overweight, and also BMI < 30 was 29.76% which indicates obesity. So BMI was a significant factor affecting the incidence of infertility. Therefore, infertility prevalence of overweight and obesity women were up to 2-3 times greater than moderate BMI. Esmaeilzadeb et al concluded that, infertile women had a 4-8 fold increased risk of obesity and 3-8 fold increased risk of being overweight compared to fertile women.[16] Obesity can cause ovarian dysfunction resulting in ovulatory dysfunction, ultimately caused to increase the incidence of infertility. Further, Dechanet et al reported obesity associated with decreased fertility by causing delay in conception and decreased IVF results. [17] Therefore; proper exercise, diet control and weight reduction in over weight and obesity female are the vital factors to reduce the increase prevalence of infertility.[18]

Infertility incidence is increase with age.[19] In our study age between 38-45 years was (31.02%) One of the main reasons for infertility is increasing the age which affect the probability of conceiving without medical intervention in cases of unexplained infertility. This finding confirms with Szafarowsko and Jerzake.[20] Further infertility increases with woman’s age on fertility is well recognized in this study. Therefore, women aged 20-40 years took part in a program of assisted reproduction also more. As the age increases the reproductive capacity is decreased, ovarian function decreased, less desire to sexual act which leads to miscarriage.

From this study primary infertility is more (68.03%) than secondary infertility (31.96%). The reason for primary infertility due to marriage in late ages, the reason for late conception may be due to seeking higher education, carrier as well as engaging both motherhood and employment rates could affect the infertility incidence. The reason for secondary infertility due to mismanaged of previous pregnancy like; unprotected abortions, long term rupture of amniotic bag, postpartum sepsis and retained placenta, which affect the expectations of pregnancy.

The limitation of the study was that, all medical records did not use to identify the causes of infertility, but only rely the statements of participants.

Conclusion:

Infertility is a very big issue now a day. Delaying the pregnancy, uterine problems, tubal blockage, ovulatory problems were more vulnerable causes for infertility. Avoid late marriage; healthy life, avoidance of junk food and proper sexual intercourse are important factors to prevent infertility. Further, understanding the causes the reproductive health care providers and policy makers provide and implement the proper treatment plan and proper investigations methods on time to prevent this infertility trend. Further women should make an aware about consequences of postponed childbearing to their late reproductive years, which being a risk of infertility with aging.

References:

1. ESHRE Capri workshop, Guidelines to the prevalence, diagnosis, treatment and management of infertility. Hum Reprod 1996; 11: 1775-807
11. Rutstein SO, Shah IH. Infecundity, infertility, and childlessness in developing countries. In, DHS comparative reports, Calverton, MD, ORC Macro and the world health Organization: 2004