Pattern of left main stenosis at a tertiary cardiac center of Nepal.

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INTRODUCTION
Left main coronary artery is the most important coronary artery since it is responsible for blood supply to more than two thirds of the heart muscle. A significant left main stem (LMS) stenosis is considered to be a lesion occupying over 50% of the vessel diameter. LMS stenosis currently occurs in 4% to 6% of all patients undergoing coronary angiography. We aim to find out the pattern of Left main stem disease in cardiology department of a tertiary cardiac center of Nepal.

METHOD
This was a prospective study single center. This study was conducted from the properly maintained record of 2 years (August 2011 to July 2013) of cardiac catheterization labs of Shahid Gangalal National Heart Centre, Bansbari, Kathmandu, Nepal. Records from all the patients undergoing CAGs were collected. Most of the patients undergoing coronary angiography (CAG) were defined as significant LMS stenosis having over 50% diameter stenosis as judged by contrast angiography. Same diagnostic criteria were used in our study. Study was approved by the institutional review committee of the national heart centre. All data was analyzed using SPSS 16.0.

RESULTS
During the study period 3290 coronary angiogram were done. Among them 102 (3.1%) patients had left main stem stenosis of more than 50%. Mean age of the patients with left main stem stenosis was 60.6±10.1 yrs. Most of (73.5%) of patients with left main stem stenosis were of age more than 55 years. Most (80.3%) of them were male. Ostial left main stem stenosis was present in 32 (31.3%) patients whereas distal left main stem stenosis was present in 70 (68.6%) patients. In patients with Left main stem stenosis, single vessel disease was present in 12 (11.7%), double vessel disease in 33 (32.3%) and triple vessel disease in 49 (48.0%) patients, whereas 8 (7.8%) patients had non-critical coronary artery disease.

Conclusion: Left main stem disease is not an uncommon angiographic finding and is often associated with multivessel coronary artery disease. It commonly occurs in distal part of vessel and the patients were older males.

Keywords: Coronary artery disease; Distal left main; Left main stem stenosis.

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RESULTS
During the study period 3290 coronary angiogram were done. Among them, 952 (28.9%) patients had normal coronary artery, 401 (12.1%) patients had non-critical CAD, 436 (13.2%) patients had triple vessel disease (TVD) and 102 (3.1%) patients had LMS stenosis.

METHOD
This was a prospective study single center. This study was conducted from the properly maintained record of 2 years (August 2011 to July 2013) of cardiac catheterization labs of tertiary cardiac center, Shahid Gangalal National Heart Center. Records from all the patients undergoing CAGs were collected. Most of the patients undergoing coronary angiography (CAG) were defined as significant LMS stenosis having over 50% diameter stenosis as judged by contrast angiography. Same diagnostic criteria were used in our study. Study was approved by the institutional review committee of the national heart centre. All data was analyzed using SPSS 16.0.
As shown in table two LMS stenosis patients were more in >55 years age group and in male. Ostial LMS stenosis was present in 32 (31.3%) patients whereas distal LMS stenosis was present in 70 (68.6%) patients

**Table 1.** Baseline characteristics of LMS stenosis patients

<table>
<thead>
<tr>
<th>Age</th>
<th>60.6±/-10.1 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>82 (80.3%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>53 (51.9%)</td>
</tr>
<tr>
<td>Diabetes Mellitus</td>
<td>47 (46.0%)</td>
</tr>
<tr>
<td>Acute Coronary Syndrome</td>
<td>33 (32.3%)</td>
</tr>
<tr>
<td>Chronic Stable Angina</td>
<td>69 (67.6%)</td>
</tr>
</tbody>
</table>

**Table 2.** Statistical analysis was done in various subgroups:

<table>
<thead>
<tr>
<th>Age</th>
<th>&gt;55 years</th>
<th>&lt;55 years</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>75</td>
<td>27</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>20</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Location of the lesion</td>
<td>Ostial</td>
<td>Distal</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*P value was calculated using Fischer’s exact test (F test)

**DISCUSSION**

Many studies have shown that LMS stenosis (40% to 94%) occur in the distal segment of the artery and extend into the proximal coronary arteries. In our study location of the lesion was distal in 70 (68.6%) patients. In a study by Saeed Sadeghian et al showed that the proportion of the male sex in those with LMS vs. 71.4%, P=0.020 and that patients with LMS stenosis were older (mean age of 58.8±10.5 years in those with LMS vs. 71.4%, P=0.03). In our study the mean age of presentation was 60.6±/-10.1yrs and the proportion of male sex was 80.3%.

In most studies LMS stenosis occurs as an isolated lesion in only 6% to 9% of patients, whereas over 70% to 80% of patients also have multivessel CAD. In our study isolated LMS did not occur, but LMS was associated with non-critical CAD in 8 patients (7.8%).

So, our results were similar to international studies regarding involvement of LMS with multivessel CAD and predominance of distal vessel involvement. Several studies comparing conventional angiography with adjunctive imaging modalities have shown LMCA lesions considered angiographically indeterminate to, in fact, be severely stenosed.

So, there may be several important limitations, which lead to a small but significant number of false-positive and false negative results, as well as significant inter-observer variability. Future studies are needed to show the effectiveness of other modalities like Intravascular ultrasound in diagnosis of LMS disease.

**REFERENCES**