STUDY OF ECG AND CHEST XRAY FINDINGS IN PATIENTS OF AORTIC VALVE DISEASES

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INTRODUCTION:
Aortic valve disease is the most common valvular heart disease in the developed world. Primary cause of Aortic valve diseases are age-associated calcific valve changes and inherited or congenital conditions (bicuspid Aortic valve or myxomatous mitral valve disease). 50 cases were studied to evaluate ECG and chest X-ray of patients with Aortic valve diseases. 31 cases had cardiomegaly, of which 17 cases were of Mixed Aortic Stenosis (AS) + Aortic Regurgitation (AR) (34%), 4 were Isolated AS lesions (8%), 8 were Isolated AR lesions (32%), 2 were sclerosed lesions (4%) (radiologically significant cardiomegaly i.e CTI ≥ 0.5). ECG evidence of LVH was seen in 54.5% of Pure AS and 47.1% of Mixed AS + AR, 7.7% of Pure AR and 22.2% of sclerosed aortic valve.

KEYWORDS
Aortic Regurgitation, Aortic Stenosis

RESULTS:
Of total 50 patients, 7 (14%) cases were in the age group of 16-20 years and 13 (26%) were in the age group of 21-40 years. The study showed highest number of patients (38%) were in the age group of 61-80 years. Among the 50 cases studied, 32 (64%) were male and 18 (36%) were female. Out of 50 (n=50) cases studied, Isolated AS was found in 11 patients (22%).

These patients were subjected to chest x-ray and ECG and were studied.

MATERIALS AND METHODS
It was a Cross sectional observational study conducted from September, 2017 to August, 2019. The study was conducted in Dr D Y Patil Medical College a tertiary care teaching hospital situated in the Pune District. A total of 50 individuals were included in the study. Patients of age >15 years with known aortic valve disease or newly diagnosed aortic valve disease attending medicine OPD or admitted in medicine department were taken as cases. Patients either newly diagnosed or on treatment for aortic valve disease with Age >12 years were included in the study. Patients with Valvular heart disease other than aortic valve, End stage renal disease, Immunocompromised patients, Chronic Decomp ensated Liver Disease were excluded from the study.
Isolated AR was found in 13 patients (26%).

Mixed AS and AR was found in 17 patients (34%) and sclerosis of aortic valve was found in 9 patients (18%).

CTI – cardiothoracic index

There was significant correlation between lesion type and cardiomegaly on chest X-ray.

Significant cardiomegaly was seen in all 17 cases of Mixed AS+AR (34%); 4 of 11 AS lesions (8%); 8 of 13 AR lesions (16%).

Only 2 of 9 sclerosed lesions (4%) had radiologically significant cardiomegaly.

LVH - Left Ventricular Hypertrophy; LAE - Left Atrial Enlargement

<table>
<thead>
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<th>Lesion</th>
<th>n</th>
<th>LVH (%)</th>
<th>LAE (%)</th>
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<tbody>
<tr>
<td>AS</td>
<td>11</td>
<td>6 (54.5)</td>
<td>3 (27.3)</td>
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<tr>
<td>AR</td>
<td>13</td>
<td>1 (7.7)</td>
<td>0</td>
</tr>
<tr>
<td>AS + AR</td>
<td>17</td>
<td>8 (47.1)</td>
<td>5 (29.4)</td>
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<tr>
<td>Sclerosed</td>
<td>9</td>
<td>2 (22.2)</td>
<td>0</td>
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<tr>
<td>Chi-square</td>
<td></td>
<td>7.93</td>
<td>7.51</td>
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<tr>
<td>P Value</td>
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<td>0.048</td>
<td>0.057</td>
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ECG evidence of LVH was seen in 54.5% of Isolated AS and 47.1% of Mixed AS + AR, 7.7% of Isolated AR and 22.2% of sclerosed aortic valve.

ECG evidence of LAE was seen in 27.3% of Pure AS and 29.4% of Mixed AS + AR.

CONCLUSION:

- Aortic valve diseases affects males more commonly than females.
- Majority (38%) of the patients usually have Mixed AS and AR.
- Chest X-ray is a useful modality and gives a clue to diagnosis of aortic valve diseases of congenital origin.
- ECG is no longer used for diagnosing aortic valve diseases but can be used for evaluation of LVH, LAE.

REFERENCES