INTRODUCTION

- Decision on adjuvant systemic therapy in hormone positive early breast carcinoma is the only grey area in breast carcinoma management.
- Genomic tests have emerged as the tool to guide treatment in early breast carcinoma (1,2).
- Artificial intelligence in the form of IBM Watson for Oncology has recently gained it acceptance (3) in oncology field

AIMS & OBJECTIVES

- To investigate the concordance between the results of genomic test, artificial intelligence and implications of the same in clinical practice in Indian setup.

METHODS AND MATERIALS

- Study Design: Prospective study
- Duration: June 2017 to June 2019
- No Of Patients: 42
- T1: Opinion from the tumor board was taken after reviewing the final pathology report & patient clinical characteristics, EndoPredict assay was done for eligible cases, all details of the patients were entered in Watson for Oncology and the recommendations were analysed
- T2: Concordance b/w EP test and Watson recommendation was compared after providing the risk prediction score to Watson for Oncology

RESULTS

<table>
<thead>
<tr>
<th>CHARACTERISTICS</th>
<th>ENDOPREDICT TEST</th>
<th>WATSON</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total no of patients</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>58.3 years</td>
<td></td>
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<tr>
<td>Postmenopausal status</td>
<td>30 (71.4%)</td>
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<tr>
<td>Breast conservation surgery</td>
<td>20 (47.6%)</td>
<td></td>
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<tr>
<td>IDC</td>
<td>35 (83.3%)</td>
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<tr>
<td>pT1</td>
<td>19 (45.2%)</td>
<td></td>
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<tr>
<td>pT2</td>
<td>22 (52.3%)</td>
<td></td>
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<tr>
<td>pT3</td>
<td>1 (2.3%)</td>
<td></td>
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<tr>
<td>Lymphnode positivity</td>
<td>15 (35.7%)</td>
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DISCUSSION

- Extremes of age, premenopausal status, intermediate grade & high Ki 67% values were the factors associated with initial discordance between the tumor board & the gene signature.
- After entering the recurrence risk score, the concordance between Molecular gene signature & artificial intelligence recommendation were 100%.
- Concordance between the decision of tumor board, the genomics & Watson was 60% initially (blinded).
- After reviewing the recurrence risk score report & the recommendation by Watson for oncology, the decision on adjuvant therapy was changed for 3 patients: hormonal therapy instead of chemotherapy.

CONCLUSIONS

- Tumor board decision can be more scientific & evidence based with the help of genomics & a learners colleague in the form of Watson for Oncology
- Even though the clinical experience is the important determinant of adjuvant therapy, genomic test with artificial intelligence, which includes the scientific evidence, will guide the decision.
- Long term follow up is needed for the validation in our clinical setting.

REFERENCES


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