



Somashekhar S P¹, S. Zaveri², D. G. Vijay³, R. Kumar⁴, P. S. Dattatreya⁵, C. Bahl⁶, ^{1,2}Manipal Hospital, Bengaluru/India, ³HCG Cancer Center, Ahmedabad/India, ⁴RGCI Hospital, New Delhi/India, ⁵Omega Hospital, Hyderabad/India, ⁶Positive Bioscience, Mumbai/India.

Poster ID: 787711/Prediction of adjuvant chemotherapy benefit in hormone positive node negative early breast cancer patients by EndoPredict- A Multicentre Pan Indian Study

Background

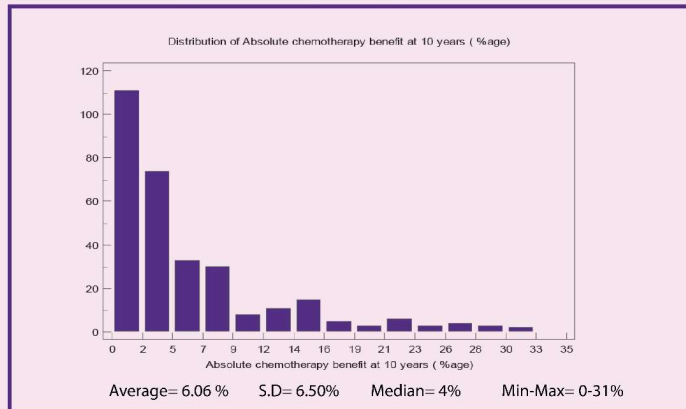
Treatment strategies in case of early breast cancer patients have been tremendously advancing and new developments regarding the selection of the adjuvant treatment in ER +ve and HER2 -ve Early breast cancer patients. Lately, the use of chemotherapy in adjuvant setting is dependent on finding out the potential absolute benefit each patient will have from the chemotherapy. The selection of the patients who actually benefit from additional adjuvant chemotherapy depends on the tumor aggressiveness which causes recurrence; hence in order to optimize the treatment plan gene expression profiling has become the important tool for carrying out such analysis.

EndoPredict is a second generation 12 gene signature based expression profiling for ER +ve and HER2 -ve early breast cancer patients, it provides EPclin score to select patients who can have absolute benefit from the additional adjuvant chemotherapy. It provides individualized absolute chemobenefit and it also provides likelihood of recurrence for 5-15 years for patients who are only treated with endocrine therapy.

Objective

To study the landscape of absolute chemo benefit in Indian patients undergoing EndoPredict testing.

- **Absolute chemotherapy benefit at 10 years (%age):**

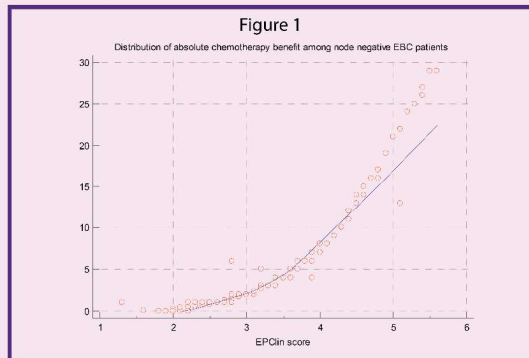


- **Corelation between EPclin Score and Absolute chemotherapy benefit at 10 years in node negative EBC patients (%age):**

Regression equation:

Y=6.82x-17.9 Y: Absolute chemotherapy benefit
X: EPclin score Corelation coefficient: r=0.92, p<0.0001

- **For every 1 unit increase in EPclin Score, Absolute chemotherapy benefit at 10 years (%age) increases by 6.82 %.**

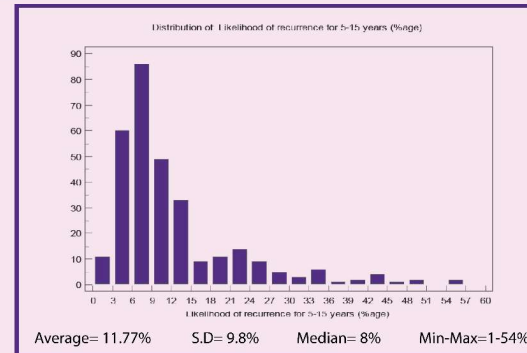


Results

In the Indian cohort, the among the node negative patients (84.09%) around 52.12% fall in Low risk category and safely forgo additional adjuvant chemotherapy. After stratification of the early breast cancer patients on the basis of the tumor size, it was found that the percentage of the Low risk patients in T1N0, T2N0 category was 69 and 40% respectively. Further, the correlation between EPclin Score and Absolute chemotherapy benefit at 10 years in node negative EBC patients was studied. It was found that for every 1 unit increase in EPclin Score, absolute chemotherapy benefit at 10 years (%age) increases by 6.82 % (same is shown in fig 1). The correlation study between the EPclin Score and likelihood of recurrence 5-15 years for extended endocrine therapy in node negative EBC patients (%age) revealed that for every 1 unit increase in EPclin Score, and Likelihood of recurrence 5-15 years for extended endocrine therapy in node negative EBC patients (%age) increases by 10.34 % (same is shown in fig 2).

Analyzing the relationship of the several factors in predicting the 10 year recurrence and further calculating the EPclin score, we found that it is not significantly correlated with age (p=0.398 and r=0.05). However, EPclin score is significantly dependent on gene expression score with a factor of 0.295, r=0.86 and p<0.001. Similarly, it is dependent on nodal status with a factor of 0.793, r=0.33 and p<0.001 and tumor size with a factor of 0.412, r=0.24 and p<0.001. The same was confirmed with the multiple regression equation:
EPclin score= 0.92+ 0.29 (EP score) + 0.39 (Tumor size) + 0.78 (Nodal status)

- **Likelihood of recurrence 5-15 years for extended endocrine therapy (%age):**

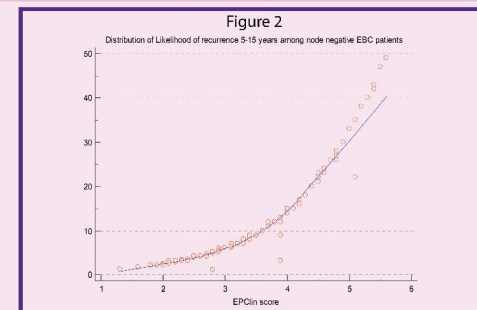


- **Corelation between EPclin Score and Likelihood of recurrence 5-15 years for extended endocrine therapy in node negative EBC patients (%age):**

Regression equation:

Y=10.34x-24.67 Y: Likelihood of recurrence 5-15 years (%age)
X: EPclin score Corelation coefficient: r=0.92, p<0.0001

- **For every 1 unit increase in EPclin Score, and Likelihood of recurrence 5-15 years for extended endocrine therapy in node negative EBC patients (%age) increases by 10.34 %**



Conclusion

EPclin score is a reliable predictor of 10 year recurrence, the landscape of chemotherapy benefit is validated in Indian breast cancer patients. Further, follow up data will establish the prognostic power of this tool in Indian population.