Use of second generation breast cancer recurrence test in Indian Cohort of early breast cancer patients for adjuvant treatment recommendation: First Prospective multicentric Indian study

Dr. Somashekhar SP1, Dr. Shabber Zaveri1, Dr. Rajeev Kumar2, Charu Bahl3, Dr. Rohit Kumar1, Dr. Ramya1
Manipal Comprehensive Cancer Centre, Manipal Hospital, Bengaluru, India1
Dept. of Surgical Oncology, Rajiv Gandhi Cancer Institute and Research Centre, New Delhi, India2
Genomics Dept., Positive Biosciences, India3

Goals:
In estrogen receptor (ER)-positive, HER 2/neu negative early breast cancer (EBC) patients, the clinical decision on adjuvant systemic therapy has been a challenge. Clinical parameters have been used to estimate the relevance of adding adjuvant chemotherapy to the endocrine regimen. Gene expression analysis is an emerging prognostic tool in guiding for therapy selection. EndoPredict (EPclin) score, a second generation prognostic tool, is the combination of gene expression analysis score (EP score), tumor size and nodal status. This study focuses on classification of these on the basis of EP score and EPclin score pertaining to the selection of treatment based on gene expression analysis alone and in combination with tumor size and nodal status.

Methods:
Prospective study done from 2016 to 2018, included EBC patients from different hospitals across India for breast cancer recurrence test, EndoPredict (Myriad genetics, USA). They were classified into high-risk (requiring additional adjuvant chemotherapy along with endocrine therapy) and low-risk patients (only endocrine therapy) as per EP score and EPclin scores.

Results:
Of 206 EBC patients (mean age: 58.4±11.7 years), 91.2% were node-negative, 55.3% were postmenopausal. On the basis of clinical parameters, 40.8%, 58.7% & 0.5% were identified as T1, T2 and T3. In the node negative cohort, 72.4% were classified into high risk on the basis of EP score & 43% on the basis of EPclin, who can be selected for additional adjuvant chemotherapy along with endocrine therapy. In node positive subgroup, on the basis of EP score 22.2% were classified in the low risk category; 33.3% were classified as low risk on the basis of EPclin score. In patients with low Ki67%, 20% had high risk on EPclin & in patients with high Ki67, 78% had low risk as per EPclin score.

Conclusions:
Lymph node positivity or negativity & Ki67 alone are not sufficient enough to conclude patients as low or high risk as per the above results. In conclusion, it is evident that in Indian node negative breast cancer patients EPclin score classified 57% patients in low risk as compared to 27.6% patients on the basis of EP score alone. So, it widely establishes the relevance of inclusion of clinic-pathological parameters in calculation of distant recurrence of breast cancer as it could identify more than double the percentage of patients in low risk subgroup and indicates its prognostic power over EP score which only includes gene expression analysis.

References