Poor survival associated with metastatic Triple-negative Breast Cancer (TNBC). Analysis of a cohort of 101 patients.

T Smit[1], J Barnard-Tidy[1], B.L. Rapoport[1,2], C. Benn[3]

[1]The Medical Oncology Centre of Rosebank
[2]Department of Immunology, Faculty of Health Sciences, University of Pretoria
[3]The Netcare Breast Centre of Excellence, Netcare Milpark Hospital, Johannesburg

Background: Triple negative breast cancer (TNBC) comprises 12–20% of all breast cancers (BC) and are a heterogeneous group of tumours, both clinically and pathologically. These cancers are characterized by the lack of expression of the hormone receptors oestrogen receptor (ER) and progesterone receptor (PR), combined with the lack of either overexpression or amplification of the human epidermal growth factor receptor-2 (HER2) gene. Patients with TNBC account for a larger number of deaths in the setting of metastatic breast cancer.

Methods: We conducted a retrospective study on 102 metastatic breast cancer patients (MBC) treated at The Medical Oncology Centre of Rosebank. Demographics, patient characteristics, metastatic patterns, and molecular subtype were analyzed using descriptive statistics and Chi-square. Univariate analysis (logrank test) and Cox multivariate regression analyses were used to determine the effects of each variable on overall survival (OS) of these patients (pts). Ethical approval was obtained by Pharma-ethics before commencement of this study.

Results: Median age at presentation was 59 years (24 to 81 years). Patients were categorized into 3 subtypes; luminal (ER^+ and/or PR^+, $HER2^-$) - 61pts (60%), $HER2^+$ - 19 pts (19%), and TNBC - 22pts (21%).
Front line treatment consisted of endocrine treatment in 12 pts (12%), and 75 pts (74%) received systemic chemotherapy. Fifteen pts (15%) received anti-Her2 therapy. The sites of metastasis included; liver - 30 pts (39%), bone - 61 pts (60%), lymph node metastasis - 37 pts (36%), brain - 4 pts (4%), and others - 14 pts (14%). Median overall survival (OS) of the entire cohort was 954 days (95% CI, 577 to 1082 days) for the cohort. The median OS for TNBC was 431 days vs. non-TNBC 1077 days (logrank: $chi^2=15.145$, $p<0.0001$). On univarite analysis, additional factors significantly influencing OS included: $ER^+ = 1051$ days vs. $ER^- = 464$ days; (logrank: $chi^2=7,853$, $p<0.0051$); $PR^+ = 1178$ days vs. $PR^- = 466$ days; (logrank: $Chi^2=13.341$, $p<0.0003$), and $Hb \geq 12g/dL$ (no anemia) 995 days vs. $Hb < 12 = 378$ days; (logrank: $Chi^2=7.022$, $p<0.0081$). Age, ECOG performance status (PS), sites of metastasis, number of metastatic sites, $Her2^+$, did not have a significant effect on OS.
On multivariable Cox regression analysis, TNBC and anemia (HB <12 g/dL) were associated with an inferior OS.

Conclusion: The real-world data of our MBC pts is in keeping with other reports. The prognosis of metastatic TNBC remains very poor. New treatment strategies are required to improve outcome in these patients.