Annals of Oncology 27 (Supplement 6): vi207–vi242, 2016
doi:10.1093/annonc/mdw371.98

gastrointestinal tumours, non-colorectal

706P **Prognostic value of the neutrophil-to-lymphocyte ratio in advanced hepatocellular carcinoma: An exploratory analysis from the ARQ197-215 study**

N. Personeni[1], L. Giordano[1], G. Abbadessa[2], C. Porta[3], I. Borbath[4], B. Daniele[5], S. Salvagni[6], J-L. van Laethem[7], H. Van Vlierberghe[8], J. Trojan[9], A. Weiss[10], A. Gasbarrini[11], D. Shuster[12], E.N. De Toni[13], M. Lencioni[14], S. Miles[15], M. E. Lamar[2], B. Schwartz[16], A. Santoro[1], L. Rimassa[1]

[1]Humanitas Cancer Center, Humanitas Clinical and Research Center, Rozzano, Italy, [2]Clinical Development & Translational Medicine, ArQule, Burlington, VT, USA, [3]Oncologia Medica, IRCCS San Matteo University Hospital Foundation, Pavia, Italy, [4]Gastro-Enterology, Cliniques Universitaires St. Luc, Brussels, Belgium, [5]Oncology, Azienda Ospedaliera G. Rummo, Benevento, Italy, [6]Medical Oncology, Azienda ospedaliero-universitaria Policlinico Sant'Orsola Malpighi, Bologna, Italy, [7]Gastroenterology, Erasme University Hospital-(Universite Libre de Bruxelles), Brussels, Belgium, [8]Gastroenterology, Gent University Hospital, Gent, Belgium, [9]Medizinische Klinik, Universitätsklinikum Frankfurt(Johannes-Wolfgang Goethe Institute), Frankfurt am Main, Germany, [10]Gastroenterology, Vancouver General Hospital & HSC, British Columbia University, Vancouver, BC, Canada, [11]Patologia Speciale Medica e Semeiotica Medica, Policlinico Universitario Agostino Gemelli, Rome, Italy, [12]Clinical Development, Daiichi-Sankyo, Edison, NJ, USA, [13]Department of Internal Medicine II, Ludwig Maximilians University - Grosshadern, Munich, Germany, [14]Medical Oncology, Azienda Ospedaliera Universitaria S.Chiara, Pisa, Italy, [15]Oncology, Cedar Sinai, Los Angeles, CA, USA, [16]Clinical Development, ArQule, Burlington, VT, USA

Background: The ARQ197-215 study randomized patients (pts) to tivantinib or placebo and pre-specified efficacy analyses indicated the predictive value of MET expression as a marker of benefit from tivantinib for second-line treatment of hepatocellular carcinoma (HCC). The aim of the current analysis was to evaluate in the ARQ197-215 cohort the neutrophil-to-lymphocyte ratio (NLR), which is thought to be a prognostic factor associated with clinical outcomes in several solid tumours.

Methods: A post hoc exploratory analysis was carried out on 98 ARQ197-215 pts with available absolute neutrophil count and absolute lymphocyte count, and preserved liver function. The cut-off used to define a high versus low NLR was the predefined value of 3.0, which corresponds to the median value. The effect of NLR was estimated with respect to overall survival (OS) and time to progression (TTP).

Results: No association was detected between the NLR and other known prognostic factors, including portal vein thrombosis ($p = 0.671$), MET expression ($p = 0.552$), alpha-fetoprotein levels ($p = 0.837$), and distant metastases ($p = 0.521$). In univariate analysis, compared with low NLR, a high NLR was associated with a hazard ratio (HR) for OS of 1.58 [95% confidence interval: 1.01; 2.47; $p = 0.046$]. Also, in multivariate analysis, the NLR and portal vein thrombosis remained independent prognostic factors for OS within the entire cohort. Median OS was 7.8 months versus 5.1 months for patients with NLR <3.0 versus NLR ≥3.0, respectively (adjusted HR: 1.62, $p = 0.030$). In univariate analysis, compared with low NLR, high NLR was non-significantly associated with a HR for TTP of 1.42 ($p = 0.122$). No statistically significant interaction between treatment effect and the NLR was detected in terms of OS.

Conclusions: Baseline NLR is a readily available and inexpensive prognostic biomarker in pts with advanced/metastatic HCC who are candidate for second-line treatments. This effect was independent of other known prognostic factors.

Clinical trial identification: NCT00988741

Legal entity responsible for the study: Humanitas Clinical and Research Center

Funding: ArQule Daiichi-Sankyo

Disclosure: G. Abbadessa: Employment - ArQule Stock and Other Ownership Interests - ArQule; Biogen Idec.D. Shuster: Employment - Daiichi Sankyo.M.E. Lamar: Employment - ArQule Stock and Other Ownership Interests – ArQule.B. Schwartz: Employment - ArQule Leadership - ArQule Stock and Other Ownership Interests – ArQule.A. Santoro: Consulting or Advisory Role - Amgen; ArQule; Celgene; Roche; Takeda.L. Rimassa: Consulting or Advisory Role - Lilly; Merck Serono Travel, Accommodations, Expenses – ArQule.All other authors have declared no conflicts of interest.