

**P – 033** Longitudinal assessment of neutrophil-to-lymphocyte ratio (NLR) from diagnosis until death reveals a biphasic trend in metastatic pancreatic adenocarcinoma patients

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**Introduction:** Baseline NLR has been found to have a significant prognostic value in metastatic pancreatic adenocarcinoma (mPA) patients. However, NLR assessment during the entire course of mPA disease has never been reported.

**Methods:** We analyzed 1025 cell blood counts (CBCs) saved to PTV-BIO.CA.RE. (Biospecimen Cancer Repository) in 44 mPA patients (23.3 CBCs/patient) who had reached the overall survival endpoint (death ascertained) and NLR was calculated as per standard. Trend of NLR over the remaining weeks to death was analyzed, and where a clear correlation was observed a standard regression analysis was performed. Potential association between NLR trends and short survival was analyzed.

**Results:** NLR values over the time had a clear biphasic trend, remaining roughly constant (median NLR 2.5, 95% CI 2.2-2.7) up to 24 weeks prior to death (correlation coefficient R 0.03, p 0.603) and then displaying a marked rectilinear increase from week -24 to death (time 0) (R 0.48, p < 0.001). The equation that expressed the rectilinear increase of NLR during the last 24 weeks of life was  $NLR = 9.663 - 0.325 * (\text{weeks-to-death})$ , indicating an increase of about +0.3 in NLR for every week passing from -24 to 0 (death). A NLR above 3.0 with a confirmed increase of > +0.3 points/week in two subsequent CBCs was able to predict an imminent death (within 24 weeks) in 97.8% of cases (Relative Risk as compared with NLR < 3 and/or increase rate < 0.3points/week: 2.75, p < 0.0001).

**Conclusion:** Longitudinal assessment of NLR in mPA patients is able to predict with great precision death occurring within 24 weeks. Treatments able to lessen the unfavourable NLR increase rate of + 0.3 points/week are likely to change the natural history of this disease.