Introduction: The management of LAPC patients remains controversial. Better discrimination for Overall Survival (OS) is needed to improve therapeutic decisions. We aimed to address this issue on the largest phase III cohort of LAPC by establishing the first prognosis model for OS with the full spectrum of parameters currently available at diagnosis.

Methods: We enrolled the 442 LAPC patients recruited in LAP07, an international multicenter randomized phase III trial (NCT00634725). Thirty-five baseline variables among demographic, cancer history, clinical, biological and radiological parameters were evaluated in univariate and multivariate analyses as prognostic factors for OS. The predictive value of the final model was evaluated with Harrell’s C-index. This analysis was repeated 1000 times with the use of bootstrap sample to derive 95%CI for the C. A prognostic score was then developed based on the identified prognostic factors in the final model.

Results: Independent prognostic factors identified in multivariate analysis (n = 370) for OS were: - age (HR= 1.01; 95%CI 1.00 - 1.03; p = 0.0418), - pain (HR= 1.36; 95%CI 1.08 - 1.71; p = 0.0094), - albumin (HR= 0.96; 95%CI 0.94 - 0.98; p = 0.0001), and tumor size (HR= 1.01; 95%CI 1.00 - 1.02; p = 0.0033) Harrell’s C-statistic for the final model was 0.60 (95%CI 0.56 0.63). A prognostic score between 0 and 4 was then calculated for each patient, based on the previous model. Three risk groups according to the risk of death were identified: - "lower risk" (score ∈ [0,1]; n = 17; median OS = 18.8 months; HR = 1) - "intermediate risk" (score ∈ (1,2]; n = 166; median OS = 13.4 months; HR = 1.7) - "higher risk" (score ∈ (2,4]; n = 187; median OS = 11.8 months; HR = 2.1) p = 0.0101 by the global log rank test.

Conclusion: Our results highlighted four OS’s independent prognostic factors among a broad spectrum of parameters at time of diagnosis. We have identified three groups with clear-cut different prognostic profiles. The determination of this simple prognostic score should allow risk stratification that may help guiding clinical management of patients with LAPC and to design for future clinical trials. An external validation with a cohort issued from ARCAD meta-analysis is pending.