Background: We report on the characteristics and determinants of outcome of the 35,784 pts included in the nationwide NETSARC/RREPS study since its inception.

Methods: NETSARC (netsarc.org) is a network of 26 reference sarcoma centers with specialized multidisciplinary tumor boards (MDTB), funded by the French National Cancer Institute to improve the outcome of sarcoma patients. Since 2010, presentation to an MDTB and second pathological review are mandatory for sarcoma patients. Patients’ characteristics and follow-up are collected in a database regularly monitored. Descriptive, uni and multivariate analysis of prognostic factors were conducted in the incident (n = 29497) pts population as well as on pts diagnosed before 1/1/2010 (n = 6287), presented to an MDTB after 1/1/10.

Results: We first investigated predisposing and associated conditions: among the 35,784, previous cancer, previous RT, NFI, Li-Fraumeni, were reported in 12.5%, 3.6%, 6%, 3% of these pts had an history of previous cancer, NFI, Li-Fraumeni, Ollier disease (p < 0.001). Prognostic factors of pts outcome at initial diagnosis were then analyzed: male gender, age, size, depth, grade 3, NFI, previous RT were all associated with a worse overall (OS) and progression free survival (PFS) in the incident pts population in univariate and multivariate analysis, while GIST, intermediate malignancy histologies, and surgery in a Netsarc center (HR:0,63) were positively correlated with OS and PFS (p < 0.001 for all). Similar results were obtained in the 6287 pts diagnosed before 2010 for OS. In pts in advanced phase, survival was superior to that reported in the literature with a median of 27 months for all sarcomas but GIST. Median OS was not reached for GIST and tumor of intermediate malignancy (58% and 76% at 5 years respectively). NFI, previous RT, and treatment outside a reference center were again associated with a worse OS in multivariate analysis.

Conclusions: In this nationwide registry of sarcoma patients, unreported prognostic characteristics sarcoma pts were identified. Treatment in a reference center reduces the risk of relapse and death.

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