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**Title:** Assessment of the restrictive allograft syndrome in patients after lung transplantation

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**Body:** Background: Chronic lung allograft dysfunction (CLAD) is the leading cause of long term mortality after lung transplantation. The rare but constant finding of fibrotic changes has led to the hypothesis that bronchiolitis obliterans syndrome (BOS) is not the only manifestation of chronic rejection after lung transplantation. Aims: The purpose of our study was to evaluate the recently reported criteria for the diagnosis of Restrictive Allograft Syndrome (RAS) in our post-lung transplantation population. Methods: We retrospectively analyzed the lung function tests from 162 patients after lung transplantation from 2000 to 2011 with a conditional survival of 180 days. Established criteria for BOS were used for the definition of CLAD. RAS was defined as a detectable, irreversible decline of more than 10% of the best post-transplant total lung capacity (TLC). CT-scans were evaluated for the detection of possible causes for the TLC-decline. Results: In our study 68 (42%) patients were diagnosed with CLAD, and 22 (14%) of these patients met the criteria for RAS after exclusion of 13 patients with other causes for a TLC-decline. Mean post-transplant survival was 2873±198 days in patients with no CLAD, 2583±261 days in patients with BOS and 2624±318 days for RAS patients (p=n.s.). In the subgroup of RAS patients CT-scans showed no alterations in 8 patients, honeycombing or reticular pattern in 3 patients and consolidations or infiltrates in 8 patients. Conclusions: The percentage of restrictive lung function patterns in CLAD patients was comparable to the previously published data. In our study mortality of patients that developed RAS was not different from the BOS group.