PERSISTENT LYMPHOPENIA AFTER ANTI-THYMOCYTE GLOBULIN INDUCTION IS ASSOCIATED WITH DECREASED LONG TERM SURVIVAL IN LIVER TRANSPLANT RECIPIENTS

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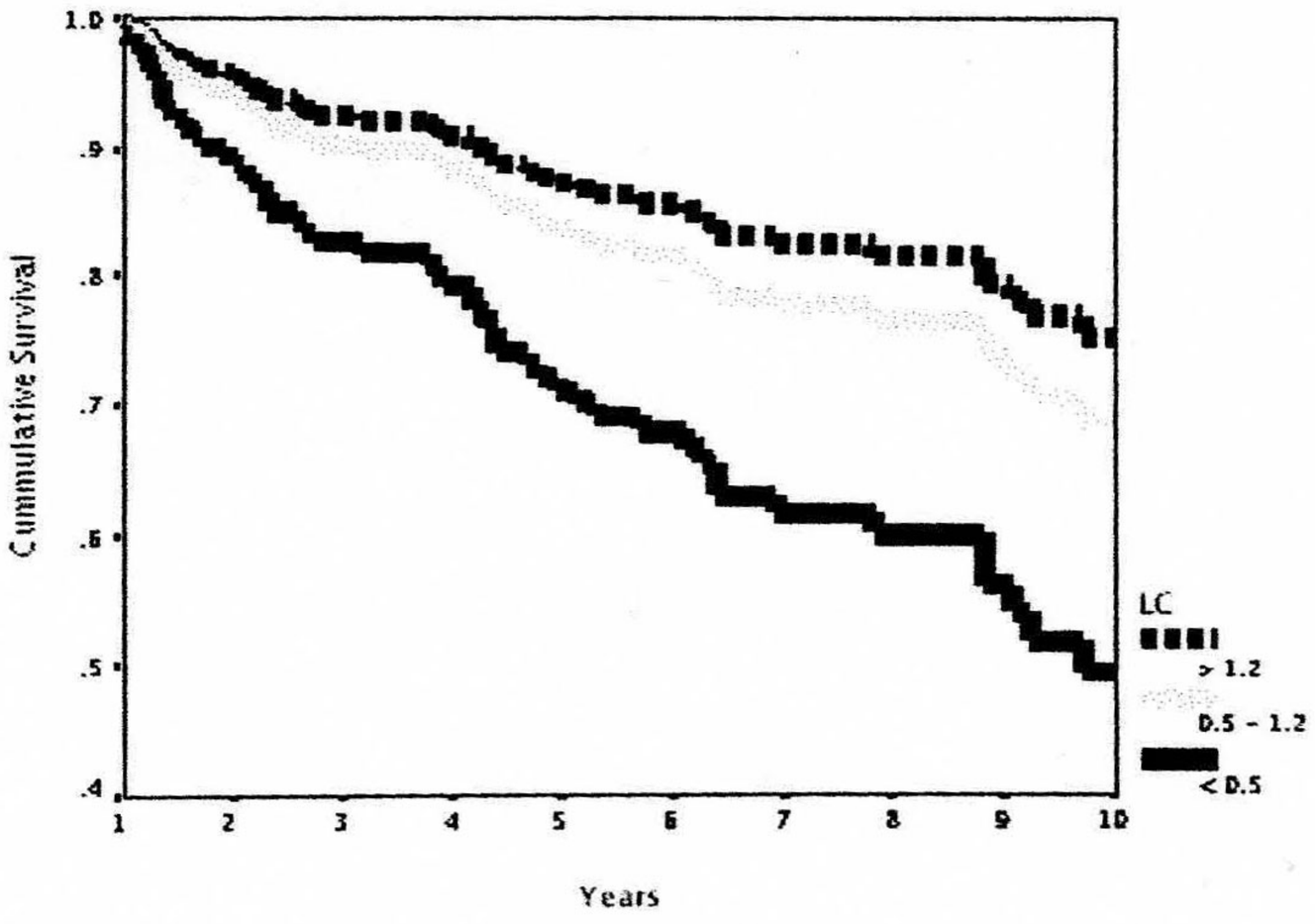
Introduction: Anti-thymocyte globulin (ATG) induction is associated with higher graft survival, as well as freedom from acute cellular rejection (ACR) after liver transplantation.

Purpose: To determine whether prolonged (> 365 days) lymphopenia after ATG induction contributes to inferior long term results after liver transplantation.

Methods: 378 primary adult liver transplants were performed between 1990 and 2006, with anti-thymocyte globulin for induction. Re-transplants and multi-organ recipients were excluded from the study population. 21 patients died during the first three postoperative months. Of the remaining 357 recipients, 266 were followed-up for more than one year. Patient survival, graft survival censored for patient death, acute cellular rejection incidence and primary disease recurrence were retrospectively analyzed.

Results: Persistent lymphodepletion correlates inversely with survival [B = -0.620, $p = 0.034$, Exp(B) = 0.538, 95% CI Exp(B): 0.303-0.956]. The 10-year survival was 77%, 69% and 50% for recipients whose one-year post-transplant lymphocyte count was > 1200/mm^3, 500–1200/mm^3 and < 500/mm^3 respectively. This correlation was still present when patient's primary disease was inserted into the model. Incidence of ACR was 0.23, 0.38 and 0.45 for the same patient cohorts. That was a statistically significant difference ($p = 0.05$).



Conclusions: After induction with ATG, lymphocyte depletion that persists for more than one postoperative year is associated with inferior long-term survival. To what degree this reflects the mechanism of action of ATG remains to be studied. Further investigations, including immunophenotyping and functional assays, should confirm the benefit of avoiding persistent lymphodepletion in liver transplant recipients.