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## Induction Immunosuppression With Thymoglobulin May Improve Graft Outcomes Without Increasing A Risk For Infection In Patients Undergoing Liver Transplantation Alone

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## Induction Immunosuppression With Thymoglobulin May Improve Graft Outcomes Without Increasing A Risk For Infection In Patients Undergoing Liver Transplantation Alone

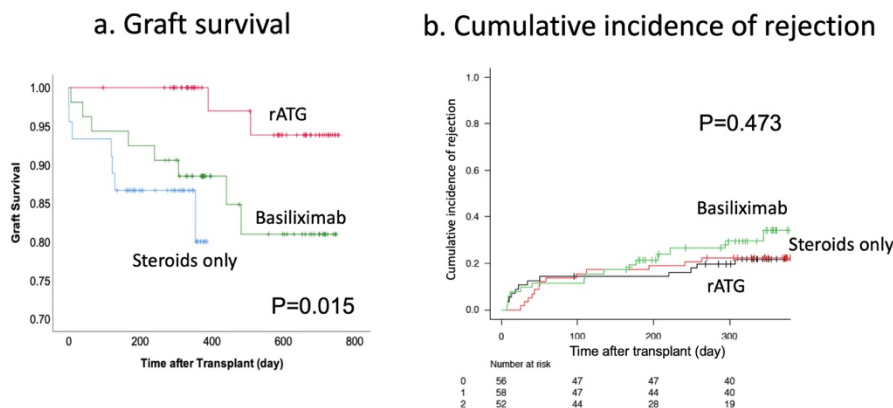
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### Abstract:

**\*Purpose:** Immunosuppression protocol for liver transplant (LT) varies between institutions and roles of induction immunosuppression in LT remain controversial. The aim of this study was to compare outcomes of primary LT patients based on the induction immunosuppression regimens, including thymoglobulin (rATG), basiliximab, and steroids.

**\*Methods:** We retrospectively reviewed medical charts of 166 patients who underwent LT alone from 2017 through 2018 at a single institution. Patients were divided into three groups based on the type of induction immunosuppression utilized, and the outcomes were compared across groups. Survival was evaluated using the Kaplan-Meier method. Multivariable Cox regression was performed to identify potential predictors of post-LT graft loss. Incidence of rejection was analyzed using Gray test by considering rejection episode and graft loss as competing risk events.

**\*Results:** During the study period, 56, 58, and 52 patients received rATG, basiliximab, and steroids only for induction immunosuppression. Tacrolimus, mycophenolate mofetil, and steroids were used for maintenance immunosuppression in all three groups. The age of the rATG group was significantly lower than the other two groups ( $P < 0.001$ ). The incidence rate of bacteremia ( $P = 0.312$ ), Clostridium difficile ( $P = 0.779$ ), Cytomegalovirus ( $P = 0.903$ ), Epstein-barr Virus ( $P = 0.332$ ), and fungemia ( $P = 0.349$ ) were similar across the three groups. Graft survival rate was significantly better in the rATG group compared to basiliximab ( $P = 0.025$ ) and solumedrol ( $P = 0.003$ ) (Figure a) After adjusting the risk by the patient's age and MELD score utilizing a multivariate Cox regression analysis, rATG showed significantly lower risk of graft loss compared to the steroids group (hazard ratio 6.66,  $P = 0.037$ ), whereas risk was similar between the rATG and basiliximab groups (hazard ratio 3.99,  $P = 0.111$ ). Gray's test showed no significant difference between the cumulative incidence rates of biopsy proven rejections between three groups (Figure b).



**\*Conclusions:** Patients undergoing LT alone with rATG for induction immunosuppression may have improved liver graft survival compared to patients who received basiliximab or steroids only. The risk of infection and incidence rates of biopsy proven rejection does not seem to be affected by induction immunosuppression regimens. Further studies are necessary to determine this relationship.