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Impact of Donor Lung Gram Stain on Post-Transplant Pneumonia and Mortality: More Lungs Can Be Used to Save Lives

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1223. Impact of Donor Lung Gram Stain on Post-Transplant Pneumonia and Mortality: More Lungs Can Be Used to Save Lives

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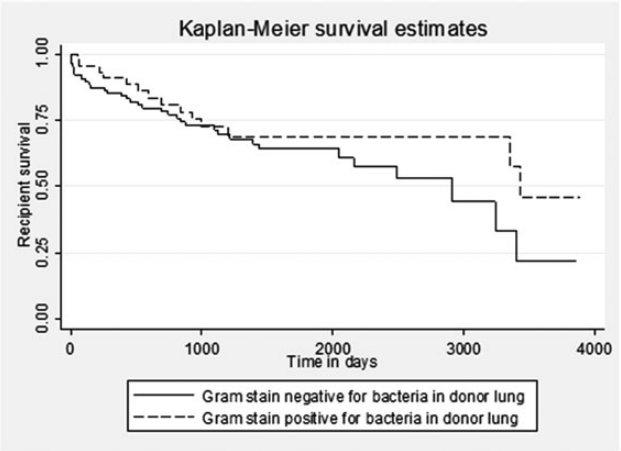
Background. Donor lungs with Gram-stain (GS) evidence of bacteria on bronchoscopy specimens are considered infected and generally deemed unsuitable for transplant. We sought to assess the impact of donor lung GS on the occurrence of post-transplant pneumonia (PTP), length of stay (LOS), and mortality.

Methods. We retrospectively reviewed medical records of all lung transplant recipients (LTR) at our center from December 2004 to February 2014. PTP was defined by the presence of at least 2 of 3 criteria that occurred within 30 days of transplant: (1) symptoms, signs or laboratory markers consistent with pneumonia; (2) radiological evidence; and (3) positive respiratory culture. Statistics: Univariate and multivariate analyses, Kaplan-Meir (KM) curves, and log-rank test.

Results. Among 149 LTRs, 45 received donor lungs with GS positive for bacteria at the time of implantation (GS+ group) and 104 received lungs with GS negative for bacteria (GS- group). Standard immunosuppression consisted of tacrolimus, mycophenolate mofetil and steroids; induction with basiliximab was rarely used. GS+ recipients spent longer time on the wait-list (mean 416.6 versus 230.6 days, $p = 0.007$) and were more likely to have a double lung transplant (80% versus 59.6%, $p = 0.02$) but were otherwise similar at baseline. Receipt of GS+ lungs was associated with longer post-operative ventilator time (mean 277.4 versus 77.1 hours, $p = 0.045$), along with prolonged intensive care unit (ICU) and overall LOS (mean 15.9 versus 9.5 days, $p = 0.014$; mean 36.2 versus 21.7 days, $p = 0.005$, respectively). Rate of PTP was similar in both groups (51% versus 38.5%, $p = 0.21$) as was overall mortality (31.1% versus 35.6%, $p = 0.71$) with similar KM curves (figure, log-rank $p = 0.2$). In multivariate analysis, GS+ group remained an independent predictor of ICU stay (OR 5.9, 95% CI 1.1-10.7, $p = 0.016$) and LOS (OR 12.6, 95% CI 2.9-22.3, $p = 0.01$).



Conclusion. Use of donor lungs that are Gram-stain positive for bacteria is associated with longer time on the ventilator, and in the ICU and hospital. However, it does not impact the development of pneumonia in the first 30 days post-transplant or mortality. Hence, criteria for use of donor lungs should be liberalized with the potential to save more lives.

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