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Successful single lung transplantation from a dialysis-dependent donor

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Dear Editor,

The number of lung transplantations is still considerably influenced by a shortage of acceptable donor organs, which has led to increased numbers of so-called marginal donors. Although renal failure patients treated by haemodialysis are traditionally excluded as organ donors, increased organ demand has led us to even consider such patients as potential lung donors. We report the case of a successful single lung transplantation from a dialysis-dependent donor.

The donor was a 32-year old woman with end-stage renal disease due to diabetic nephropathy which had been treated by haemodialysis for the last 3 years. The patient had diabetes type I since her third year of life, and was treated with insulin therapy. She also had arterial hypertension and left eye retinal ablation.

Brain death due to intracranial bleeding was confirmed on the first day of hospitalization, 10 h after admittance. The donor did not smoke nor had any pulmonary disease. She was mechanically ventilated for 23 h before recovery of the organs. The initial chest X-ray showed no signs of inflammation or cardiac decompensation. Blood gas analysis and all other laboratory findings were

normal. Six hours after brain death confirmation, another chest X-ray was done and showed an inhomogeneous parahilar infiltrate on the right which was characterized as possible inflammation. Laboratory markers of inflammation were slightly elevated (C-reactive protein 42.9 mg/L, leukocytes $10.8 \times 10^9/L$) and the donor was empirically given 2 g of cephtriaxon i.v. before the organ recovery. Bronchoscopy showed no signs of secretion or inflammation bilaterally. Partial arterial oxygen tension (PaO_2) over fraction of inspired oxygen (FiO_2) was 514 mmHg.

A left single lung explantation was performed. The right lung was not recovered because of the X-ray finding of possible inflammation although bronchoscopy was normal and laboratory inflammation markers were only slightly elevated. The transplantation procedure was uneventful, and 9 months after the transplantation, the recipient, a 54-year-old woman with idiopathic pulmonary fibrosis, was alive, stable and had good lung function.

End-stage renal disease treated by haemodialysis can itself impact on pulmonary function. The most common changes are mild to moderate pulmonary hypertension, mild transient hypoxemia, mild restrictive disease, hemosiderosis, fibrinous pleuritis, pulmonary fibrosis and calcification, pleural effusion and pulmonary oedema [1]. The shortage of lungs available for transplantation leads to increased numbers of marginal donors. Although traditional criteria for marginal donors [2] do not include end-stage renal disease, we think this should be revised. This case report, as well as all four other previously published cases [3, 4], shows that lungs from uremic donors could successfully be used for transplantation. The main criteria for successful transplantation should be a PaO_2 over

FiO_2 higher than 300 mmHg and the absence of other causes of pulmonary disease [2]. As shown in our case, even unilateral infiltrate should not represent a contraindication for the recovery of the contralateral lung [5].

This is the first Croatian case of successful lung transplantation from a dialysis-dependent donor which should act as a guideline for widening the marginal donor criteria for future lung transplantations in today's era of shortage of "perfect" donors.

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