A sudden increase in delayed graft function in living donor kidney transplantation and a changed intraoperative fluid regimen.

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Introduction

DGF:

Need for dialysis 1st week after transplantation
functional DGF (fDGF): failure of fall in serum creatinin of 10% on 3 consecutive days 1st week posttransplantation

2014: 1.4% DGF 8.4% fDGF
2015: 4.4% DGF 8.9% fDGF
2016: 11.3% DGF 26.4% fDGF

increase $\pm 300\%$

FLUID:

2014: 4-5 L ballanced cristaloids for every recipient
2015: introduction GDFT, goal SVV < 10% at reperfusion
2016: GDFT, SVV < 10% at reperfusion for every recipient

Increase in DGF/fDGF related to adjustment in fluid regimen?

Results

Univariable analysis

Recipients with fDGF :

- Donors were younger: 52 (41-60) vs 56 (47-64) P 0,0466 and taller: 180 (173-184) vs 173 (167-181) P 0,0121
- Less preemptivly transplanted (more patients dialysis dependant): 15% vs 57% P< 0,0001
- Intraoperative:
 - less fluid ml total: 3000 (2150-3500) vs 3200 (2600-4000) P 0.0138
 - less ml/kg BW: 34,3 (25,3-41,5) vs 43,7 (34,2-53,6) P 0.0064
 - more frequent noradrenaline: 79% vs 52% P 0.0103
 - more frequent noradrenaline low dose: 32% vs 13% P 0.0192
 - more frequent artery sacrificed : 4% vs 16% P 0.0433
- Lower urinairy output 1st h: 250 (65-488) vs 375 (250-625) P 0.0111
- Lower urinairy output 2nd h: 190 (55-453) vs 350 (250-500) P 0.0077

Changes in time

Logistic regression

Unadjusted analysis; Effect of the amount of fluid on developing fDGF was

0.96 (B-0,039, 95% CI 0.932-0.993 P=0.016)

Adjusted for dialysis, sacrifice of an artery and the use of noradrenaline; Amount of fluid remained independently associated with fDGF

0,96 (B-0,037, 95%CI 0.931-0.997, P=0.032)

Conclusion

Goal-directed fluid management towards an SVV of 10% has led to reduced intraoperative fluid administration. This seems to be an independent risk factor for development of fDGF in living donor kidney transplantation. A more liberal fluid management using other goals might be more appropriate.

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