# MORTALITY IN RENAL TRANSPLANTATION

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## INTRODUCTION AND AIMS

Long-term outcomes in renal transplantation are far away from expected, and death with a functioning graft is the main reason for renal loss. Cardiovascular (CV) disease is the chief cause of death, followed by infection and malignancy.

Some recent studies showed a change in the incidence of causes of death in renal transplanted patients.

**The aims of this study** were to identify the causes of death in our renal transplanted patients and to try to identify potential risk factors for each cause of death.

## POPULATION AND METHODS

We performed a retrospective, observational study, based on clinical records of all patients (pts) transplanted in our Unit who died with a functioning graft, since 1989 until December 2012, from a cohort of 1064 pts.

Clinical data analysed: age, gender, race, time on dialysis, cause of ESRD, presence of DM, hypertension, secondary hyperparathyrodism, smoke history, donor type, donors' age and gender, HLA mismatches, cold ischemia time, induction therapy, immunosuppression (ISS) realized; post transplant diseases; follow up (fup) time; serum creatinine (Scr) values and cause of death.

## RESULTS

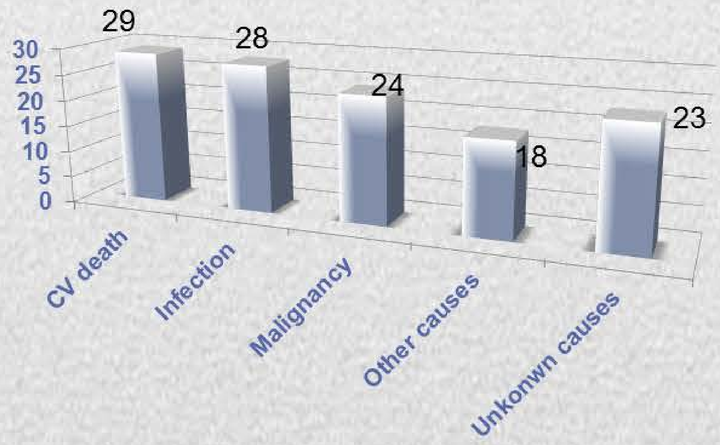
**122 death patients**

- 91 males (74.6%); 91.8% caucasian
- Mean **age** of 53.7±9.3 years
- Mean **time on dialysis** 61.4±60.3 years
- 9 diabetics (7.4%); 105 with hypertension (86.1%)
- 51 hyperparathyrodism (41.8%); 29 smoke history (23.8%)
- Hepatitis C virus in 26 pts(21.3%); CMV IgG in 109 (89.3%)
- Mean **follow up time** post-transplant of 80.2±65.1 months
- Mean **Scr** at time of death 2.7±2 mg/dl

- 23 pts(19%) performed **induction therapy**
  - Basiliximab in 15 patients
  - Tymoglobulin in 8 patients
- 50 pts (41%) had an **acute rejection** episode treated
- 80 pts (66.4%) had an **opportunistic disease**
- 64 pts (52.5%) a **CV event**
- 40 pts (33%) had a **malignancy** diagnosed

- Only 2 live donors
- Mean HLA mismatches 3±1.1
- Donors mean age of 41.3±17 years
- Mean **cold ischemia time** 16.9±5.7 hours

### CAUSES OF DEATH




**CV DEATH: n= 29**

Heart attack 14; Stroke 6; arrhythmia 3;

Limb ischemia 1; mesenteric ischemia 1

Ruptured aneurysm 2; PTE 2

**INFECTION: n=28**

Bacterial sepsis 20; Cholangitis 2; Malaria 1;

Tuberculosis 2; Aspergilosis 2; Meningitis 1

**MALIGNANCY: n=24**

Solid tumor 16; PTLD 4; Skin 4

**OTHER CAUSES: n= 18**

GE 6; Neurological 5; Suicide 1;

Accidental 2; Natural 1

**UNKNOWN CAUSES: n=23**

### EVENTUAL RISK FACTORS FOR EACH CAUSE OF DEATH

| | CV | INFECTION | MALIGNANCY | p |
|---|---|---|---|---|
| Gender M:F | 22:7 | 20:8 | 18:6 | NS |
| Recipients Age (yrs) | 52.4±8.8 | 54.9±8.2 | 53.7±8.8 | NS |
| Time on dialysis (M) | 52.5±30.8 | 68.3±45 | 65.9±109.3 | NS |
| Smoke (%) | 31% | 22.2% | 29.2% | NS |
| Hypertension pre Tx (%) | 96% | 78.5% | 75% | <0.05 |
| Donor age (yrs) | 40.8±16 | 48.4±14.8 | 37.7±18.1 | <0.05 |
| HLA Mismatch (n) | 2.9±0.9 | 3±1.5 | 2.9±0.9 | <0.05 |
| CMV IgG + (%) | 82% | 96.4% | 95.6% | <0.05 |
| ISS | IgEV | Thymoglobulin | MPDN | <0.001 |
| Scr (mg/dl) | 3.3±2.6 | 2.9±1.9 | 1.8±1 | <0.05 |
| Follow-up (M) | 67.8±73 | 72.6±62.9 | 104.9±52.5 | <0.05 |
| Early death | 24.1% | 10.7% | 0% | <0.05 |

Arterial and renal dysfunction were risk factors for CV death. Early death occurred mostly in these pts. Use of IglV was associated with CV death.

Aggressive ISS was associated with death from infection.

Longer follow-up period was associated with death from malignancy.

M:F – Male:Female
Yrs – years
M – months
ISS – immunosuppression
Scr – Serum creatinine
CV - cardiovascular
NS non-statistic

## CONCLUSIONS

Our results are in line with other published results: the main cause of death was CV, followed by infection and malignancy.

Aggressive and extended ISS have influence in global mortality.

References:

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