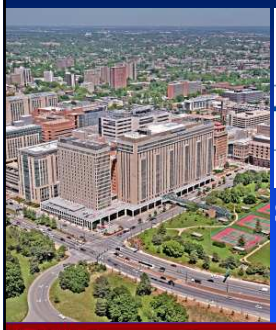
Approaches to the transplant Patients with AV access



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Gift of Life

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Disclosures

Laboratory and clinical research support from industry for research related to transplant and vascular access

None of the research or non FDA approved products will be discussed in this presentation

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74 yr. old male dialysis start 2/03
Failed AVG different provider
AVF 2 stage used 1/04
CAD kidney transplant 12/05
Pain and redness over patent AVF
Infected thrombus in AVF outflow
Creatinine 2.1 BUN 38

1. Non-surgical management
2. Excision of AVF
3. AVF salvage
4. Interventional thrombolysis

Excision of infected thrombus
Repair outflow vein
Skin flap reconstruction

78 yr. old female transplanted on 8-8-13
H/O mild arm pain and shoulder discomfort. Worried about graft complications

P/H: AVG placed in 2-22-10 revised 2-27-10
First thrombectomy 2-27-10, 20 angioplasties to keep it open till transplant on 8-13, No angioplasties since

Clinical eval: Evidence of chest and shoulder collaterals, No arm edema, Patent AV Graft
Access flow volume 958ml/min (brachial artery)

a. Ligate and excise the AVG
b. Ligate AVG
c. Angiography and venoplasty
d. Counselling and no active intervention

Reassurance, education about natural history of access behavior following transplant, information on to expect and when to call - No active intervention

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78 yr. old female transplanted on 8-8-13
H/O mild arm pain and shoulder discomfort. Worried about graft complications

AV graft placed in 2-22-10 revised 2-27-10
First thrombectomy 2-27-10

20 trips to VIR none are thrombectomies except the first one

No access interventions following transplant 8-13

Evidence of chest and shoulder collaterals
No arm edema
Patent AV Graft
Access flow volume 958ml/min (brachial artery)

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Approaches to the transplant patient with an AV access

Outline

- Prevalence of the problem
- Transplantation rates in ESRD
- Transplant graft survival
- Natural history of AVA after transplant
- Utility of patent access in a transplant patient
- Recommendation
- Management options

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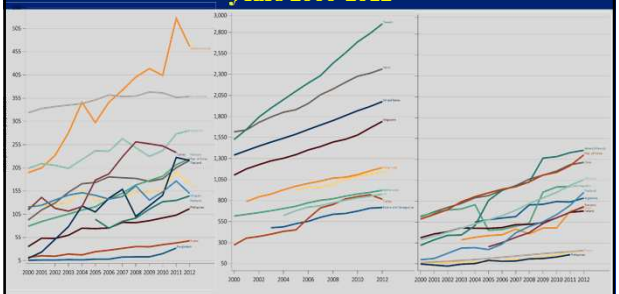
Trends in the incidence and prevalence rate of ESRD by country (per million population), years 2000-2012



USRDS 2014; ESRD Vol 2: Chapter 10, Fig. 10.2, 10.6

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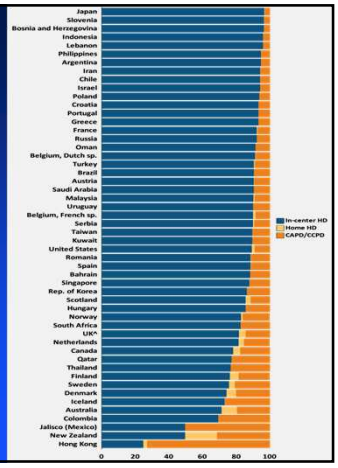
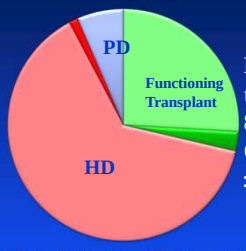
Treatment modalities global scenario



USRDS 2014 vol.2 Fig.10.9

Number of ESRD patients by treatment modality (n = 636,905)



Patients on dialysis 449,422

Patients awaiting transplant 81,981

Organ availability ±11,000

Pevelant Tx | Tx in 2012 | Center HD | Home HD | PD

163,218 + 17,305 Total Tx 180,818

400,788 + 7,923 Total HD 408,711

40,711

USRDS 2014 Vol 2, Fig 1.1, ESRD, Ch 1

US kidney transplant survival

Region	Transplant Type	Years Post Transplant	Number Functioning / Alive	Survival Rate	95% Confidence Interval
U.S.	Primary Transplant	1 Year	36324	91.9	(91.6, 92.1)
U.S.	Repeat Transplant	1 Year	4702	89.7	(88.8, 90.5)
U.S.	Primary Transplant	3 Year	37060	82.4	(82.0, 82.7)
U.S.	Repeat Transplant	3 Year	4624	78.2	(77.1, 79.2)
U.S.	Primary Transplant	5 Year	27535	72.1	(71.6, 72.5)
U.S.	Repeat Transplant	5 Year	3365	66.9	(65.7, 68.2)

Nearly 6,000 patients are back on dialysis within 5 years

http://optn.transplant.hrsa.gov/converge/latestData/rptStrat.asp on 10-1-15

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Transplant wait list and outcome

2000 – 2500 patients return to dialysis within a year
4500-5000 return to dialysis within 3 years

Patient on kidney waiting list in US

Total patients	**109,060**
Primary transplant	**93,819**
Repeat transplant	**15,241**

14 -15% of patients on the wait list are awaiting retransplants

http://optn.transplant.hrsa.gov/converge/LatestData/rptStrat.asp **Accessed 9/8/15**

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Natural history VA after transplant

	Good access	Access with problems
AVF	Stays open May present with complications	Presents with complications May thrombose
AVG	Often clots	Always clots
Catheter	Removed	Removed

Causes for hypocoagulability in ESRD

- **Uremic platelet dysfunction**
- **Anemia**
- **Uremic toxins**
- **HD induced**
- **Anticoagulants induced**

Wattanakit K. JASN 08: 135

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Advantages of a functioning access

Access available in case of urgent need
- delayed graft function
- acute rejection
- draft failure

Disadvantage

High output cardiac complications??
Distal limb ischemia
Non thrombotic access complications
Cosmetic concern

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Recommendations

Routine access monitoring in post-transplant phase
Clinical exam &Ultra sound evaluation

Asymptomatic functioning access → no intervention

Symptomatic Dysfunctional access → tailored approach

Management decisions based on transplant kidney function and the expected outcome and magnitude of the intervention

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Interventions to consider in post-transplant patients

Flow reduction → Symptomatic
Flow reduction → Extreme high flow

Aneurysm repair → Symptomatic
Aneurysm repair → At risk
Aneurysm repair → Cosmetic?

Stent/angioplasty → Only for access that need be used in a finite time

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Common presentations and questions

Acute thrombosis presents with pain, swelling over AVF, redness and associated with all signs of inflammation

Most patients need reassurance and
symptomatic management
antibiotics are rarely necessary
short course of oral antibiotics causes no harm
Excision of access is rarely indicated

Advantage: outflow vein stays open beyond the entry of a tributary inflow for future use

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Common presentations and questions

Acute access thrombosis
Does the patient need anticoagulation?

Thrombosis often is a result of stasis
Stasis is a result of outflow stenosis
Stenotic outflow does not permit clot migration

Anticoagulation prevents clot propagation
does not help clot dissolution

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Summary

Transplant provides efficient renal replacement for a finite period
HD remains is the mainstay for renal replacement therapy
Vascular access is the life line for an ESRD patient
Most AVG thrombose after transplantation
AVF with significant outflow problems thrombose after transplantation
Following transplant all access need monitoring
Decision to intervene on VA problems should be based on transplant function and results of intervention

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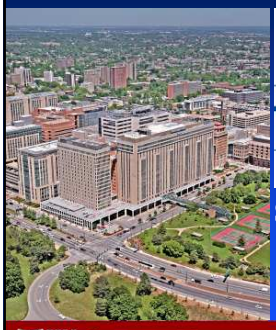

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