Multiple Myeloma preceding Kidney Transplantation

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Disclosures

None

Overview

1. Clinical case - Referral
2. Background of Myeloma and the patient's with associated ESRD
3. Benefits & Risks of Kidney Transplants in this population
4. Clinical Case – Candidacy, Risk Mitigation & Outcomes
5. Potential Future Research

Clinical Case – Referral for KT

61F w/ CKD-IV due to biopsy proven light chain cast nephropathy

PMH: Lamda Light Chain MM diagnosis in 2020

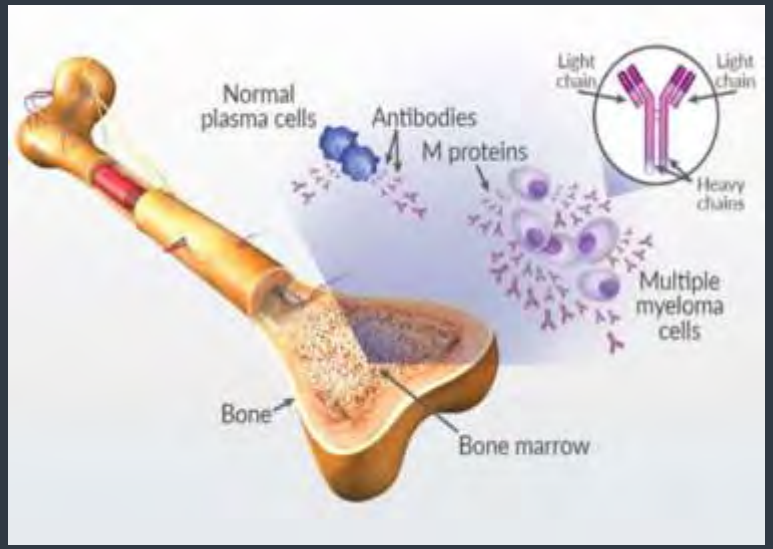
- Level of disease risk: standard [FISH t(11;14)]
- Cr 5 at the time of diagnosis (previously normal), did not require dialysis
- Initial MM Tx: PLEX, CyBorD x4, then autologous stem cell transplant in 2021

At time of Review/Referral in 2023

- Kidney function
  - Improvement early post diagnosis, but still with dysfunction. Cr mid 2.5, GFR 21
  - PD catheter in place but not on dialysis yet
- MM
  - VGPR with only sign of disease positive urine immunofixation.
  - Lenalidomide maintenance

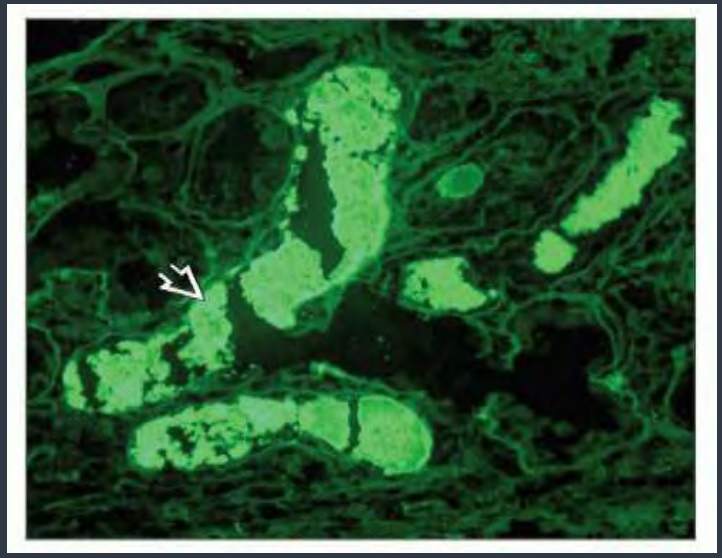
Multiple Myeloma

Hematologic Malignancy



https://themmrf.org/multiple-myeloma/

Light Chain Cast Nephropathy



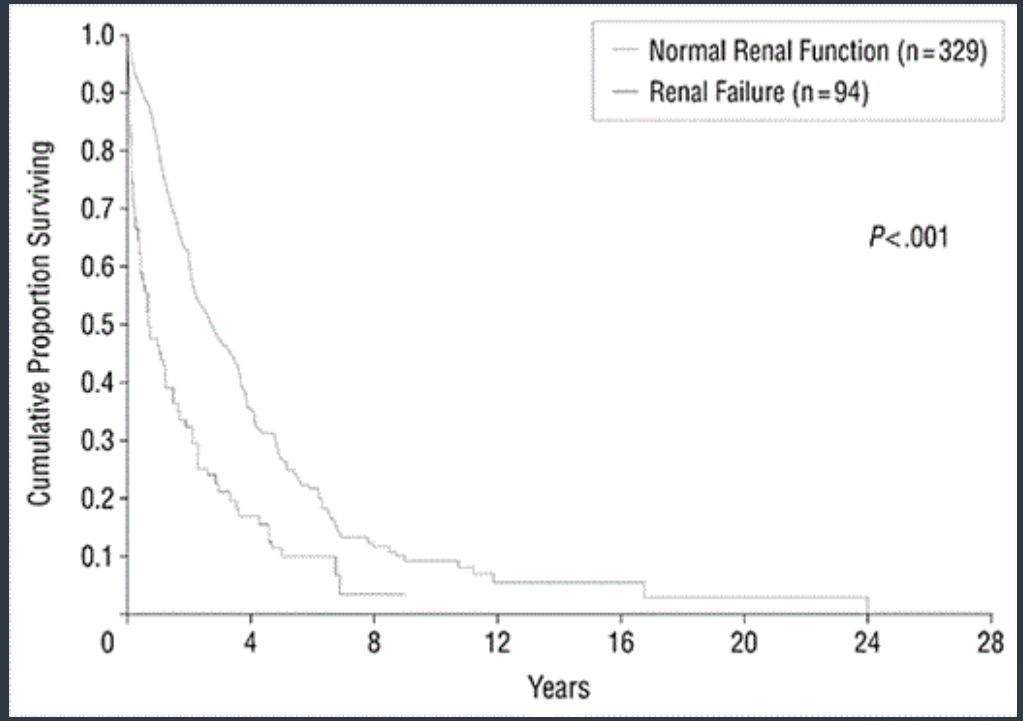
https://basicmedicalkey.com/myeloma-cast-nephropathy/

Multiple Myeloma

Historically:

-Contraindication to kidney transplant

-Median survival ~3-4 years, much less if dialysis dependent



https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/209464

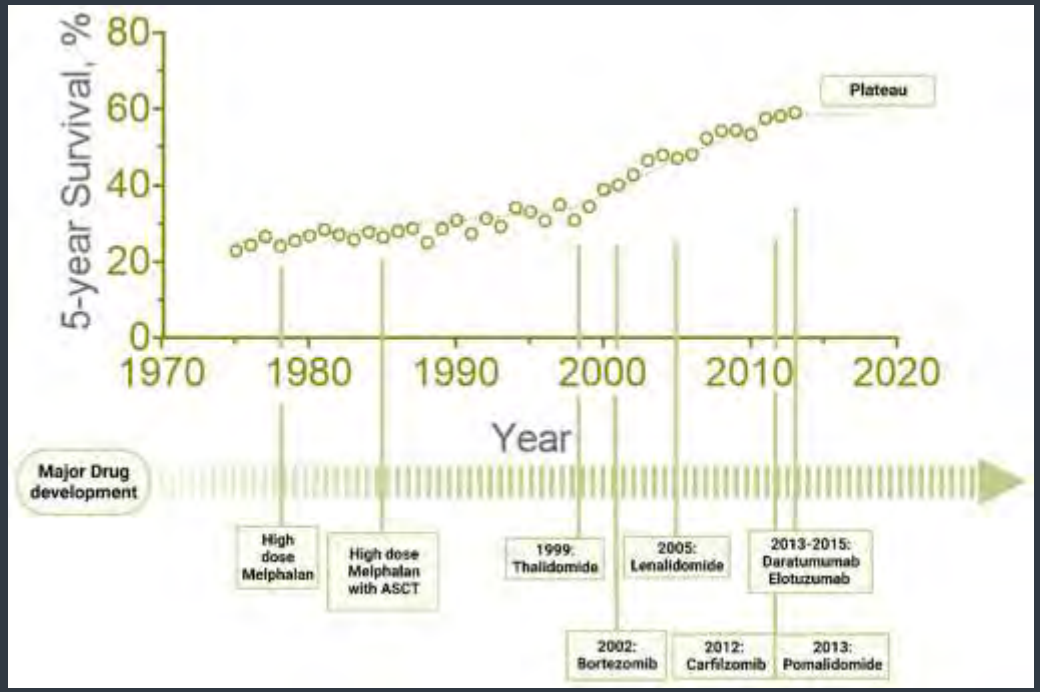
Multiple Myeloma

Advancements:

-Novel therapies (proteasome inhibitors, immunomodulatory drugs, mAbs) combined with ASCT

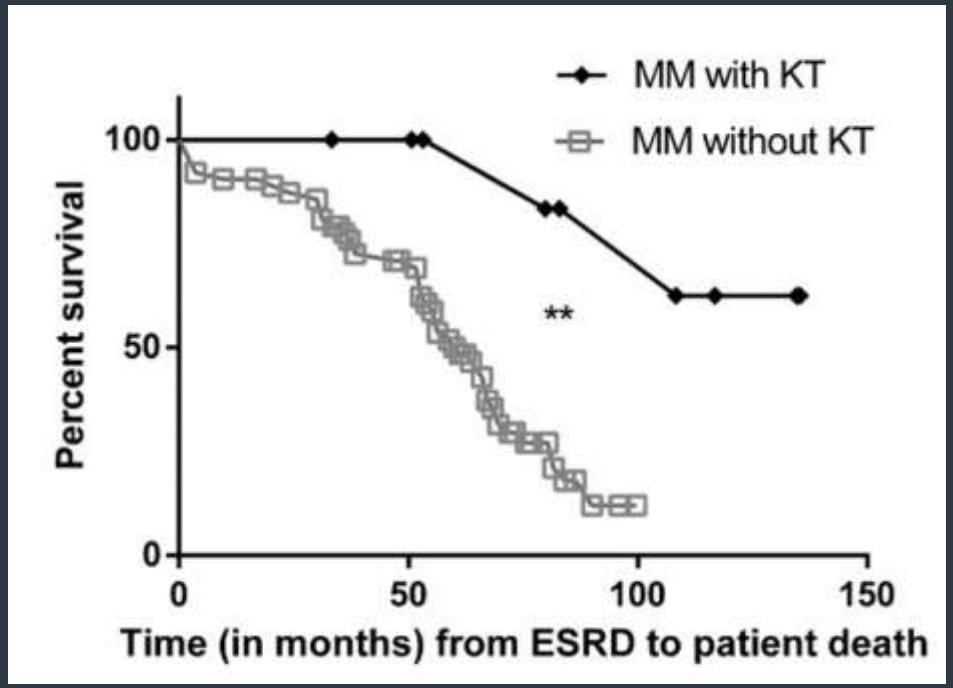
-Improvement in median survival ~8+ yrs

-Subset of ~20% achieve deep remission



https://www.mdpi.com/2072-6694/14/17/4082

Myeloma & Kidney Transplantation



https://academic.oup.com/ckj/article/14/1/156/5610160

Benefits
-Increased survival
-Dialysis independence
-Improved QOL
-Increased options for Myeloma Management

Considerations/Risks
-MM recurrence
-Infection risks
-Rejection

Risks - MM Recurrence post KT

Primary concern significant risk of MM Recurrence Post Transplant: rates ~ 50%

- Timing of relapse varies greatly (months to years)
- Depth of remission:
    - VGPR or CR sustained 1-2 years
    - weigh risks of dialysis in this population vs length of remission
- Biological risk of myeloma: standard-risk or low-risk myeloma carries a more favorable prognosis
- IS: More intense T cell depletion trends toward higher mortality from relapse

MM maintenance therapy

- Data is lacking on when to restart medication
- Lenalidomide in standard risk patients, but associated rejection
- Bortezomib has some potential benefits
- Unknown with many other agents

Risks – Rejection and Infection post KT

Rejection Risk

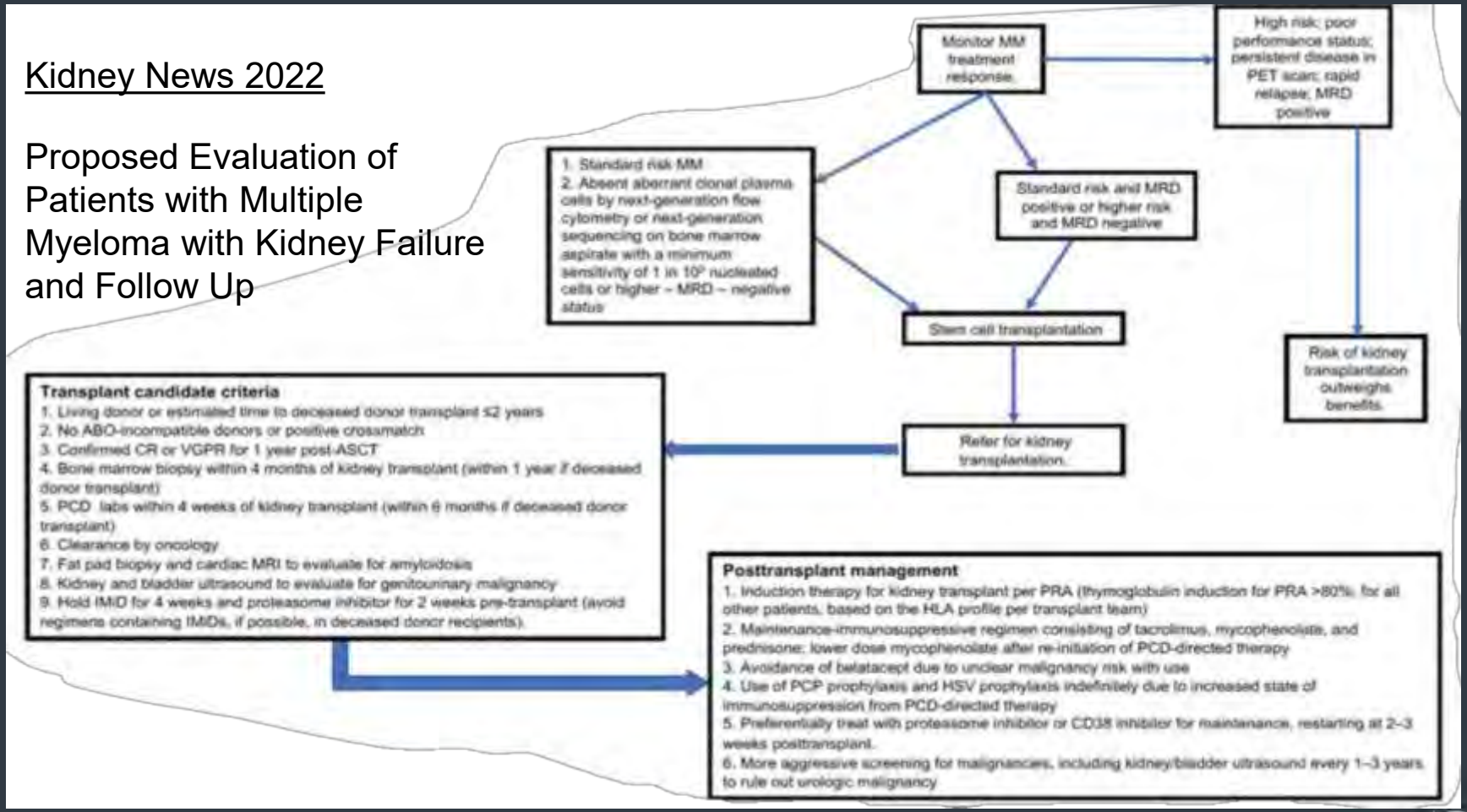
- AMR less common
- TCMR ~30%
  - Management could be complex
  - Immunomodulator drugs (like lenalidomide) have known s/e of stimulating T cell and NK cell activity)

Infection Risk

- Immunocompromised both from disease and treatments
- Some evidence of increased viral and fungal infections
- Conflicting data – short term follow up, small sample sizes

Kidney News 2022

Proposed Evaluation of Patients with Multiple Myeloma with Kidney Failure and Follow Up



https://www.kidneynews.org/view/journals/kidney-news/14/6/article-p26_14.xml#:~:text=chemotherapy%20alone,were%20unknown%20in%20these%20patients

Case – Determine Candidacy

61F CKD-IV due to biopsy proven light chain cast nephropathy d/t MM

2 years post MM therapy and ASCT, w/ continued impaired kidney function, GFR 21

MM Factors to Consider:
- Standard risk genetics
- Sustained VGPR > 2 years post ASCT
- MM Initial therapy included Bortezomib

Timing of Transplant
-Highly encouraged to have living donor

Counseled and understand risks
- Recurrence of MM
- Risk of rejection

Clinical Case – Transplant Mgmt

62F s/p Living Related Kidney Transplant

-Anti-rejection: Basiliximab Induction, and standard maintenance IS

-MM maintenance therapy (lenalidomide) held 7 days prior to transplant and restarted 3 weeks post transplant

-No significant intra or post-operative complications

Last KT follow up, 3 months post-transplant:

-Cr 1.0 (Bsl), UPCR 0.2

-IS: Tac (FK 6-10), Mycophenolate Sodium 540 mg bid, Pred 5 mg

-Very low level BKV, but otherwise no significant infectious history

Oncology follow up just before our last appointment -- recent SPEP and free light chains all negative. Recheck in 12 weeks

Summary

- Kidney transplant in patients with MM is an emerging viable option with increased survival

- Proceed with caution in selected patients with careful monitoring for relapse and rejection

- As therapies for MM continue to improve, we will have to be mindful of an evolving landscape of knowledge and the complexity of care in these patients

Future of MM & Kidney Transplants

- Larger data sets and longer term follow up

- Formal consensus for candidate evaluation

- Optimization of post-transplant MM maintenance therapy

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