

Kidney and Renal Pelvis Site Analysis
Mercy and Unity Cancer Center

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Presented at the November 25, 2008 Cancer Committee Meeting

Diagnosis:

Kidney cancer cases diagnosed and treated at the Mercy and Unity Cancer Center have increased almost five times over the last 26 years (Figure 1). This increase has resulted primarily from increased utilization of our center from patients in our service area. The national incidence has increased in kidney cancers over this period by 2 to 4% every year.

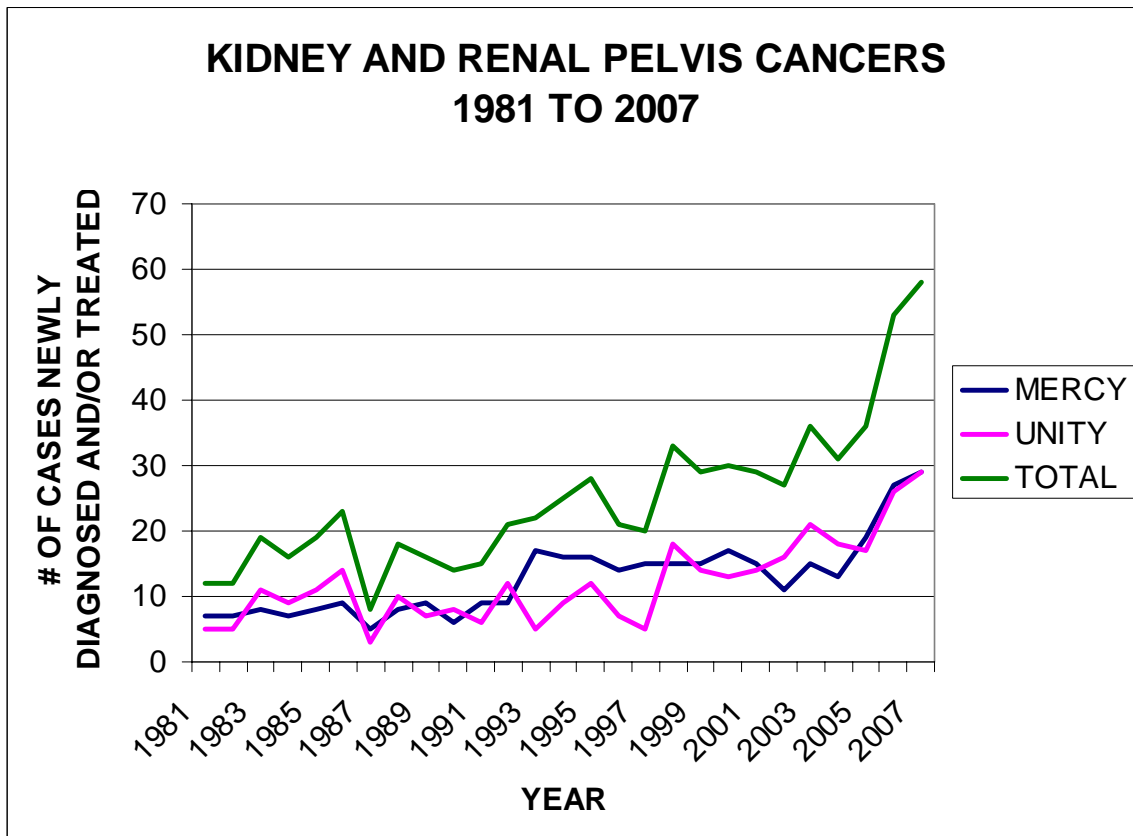


Figure 1

Risk Factors (genetic):

Of note, 5% with cystic disease will eventually have kidney cancer.

It has been estimated that up to 10% of renal cell carcinoma is hereditary. Some syndromes involve only renal cell carcinoma as others involve various cancers in conjunction with renal cell carcinoma to compose the syndrome.

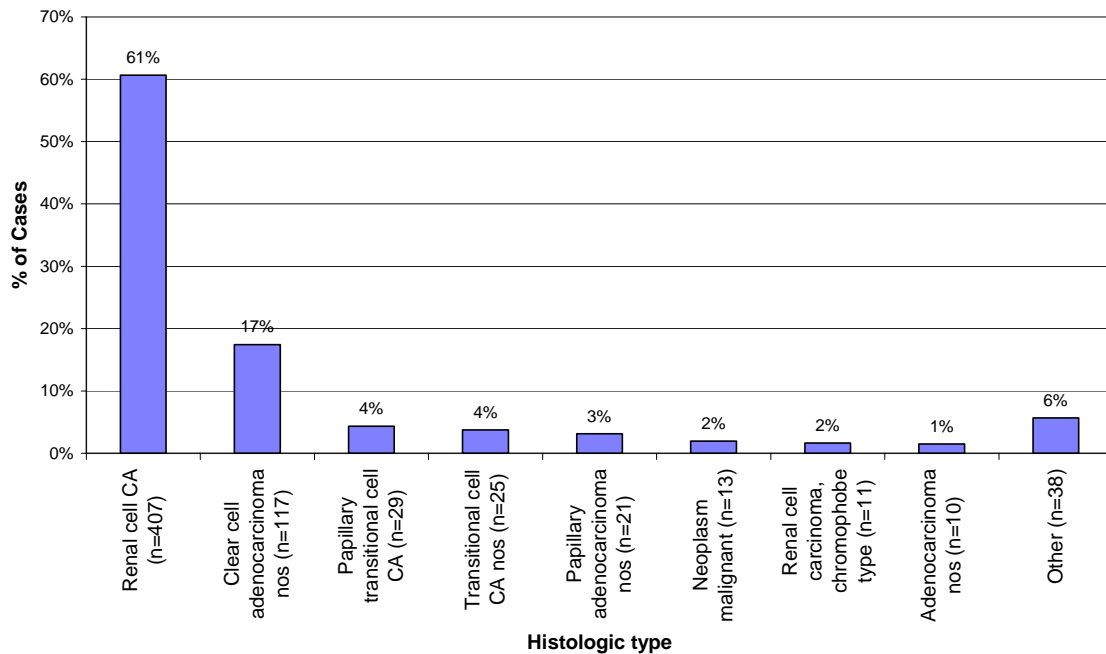
The main renal cell carcinomas that can be involved in a hereditary syndrome are clear cell, transitional and papillary. Clear cell carcinoma can be seen in syndromes such as Li-Fraumeni, Tuberous Sclerosis and Von Hippel Landau. Transitional carcinoma is most often seen with Hereditary Non-Polyposis Colorectal Cancer (HNPCC) or otherwise known as Lynch syndrome. Papillary renal carcinoma has been most linked to Hereditary Papillary Renal Carcinoma or Birt-Hogg Dube syndrome.

As approximately 90% of renal carcinomas do not have a hereditary cause, appropriate genetic counseling referral is necessary. Age of diagnosis is a determining factor. Anyone diagnosed with renal cell carcinoma before the age of 50 is considered a genetic counseling candidate. The involvement of other cancers in the family (example: Lynch syndrome: Do we see colon, uterine and/or ovarian cancer in the family with someone who has transitional cell carcinoma?) Lastly, is the cancer unilateral or bilateral? Most genetic syndromes involving renal cell carcinoma involve both kidneys.

Trends in Histology:

- Clear cell used to be 85% of cases, now 70% of cases. [5-year survival 44-94%]
- Papillary has increased from 10 to 20 percent. [5-year survival 82-90%]
- Sarcomatoid is 10% of cases [associated with poor prognosis].

**Histologies for Mercy and Unity Kidney Cancers - 1993 to 2003
(n=671)**



Staging:

Figure 2 shows the AJCC stage distribution at diagnosis for Kidney cancers at Mercy and Unity compared with national data. The Mercy and Unity data is for 1993-2003,

whereas national data comes from the National Cancer Data Base (NCDB) for 1994-97 and 1998-2000.

At diagnosis, patients are stage 1 or 2 (early stage) 45% of the time; Stage 3, 25% of the time; Stage 4, 30% of the time. Most patients with early stage RCC are diagnosed on incidental CT scans done for unrelated symptoms.

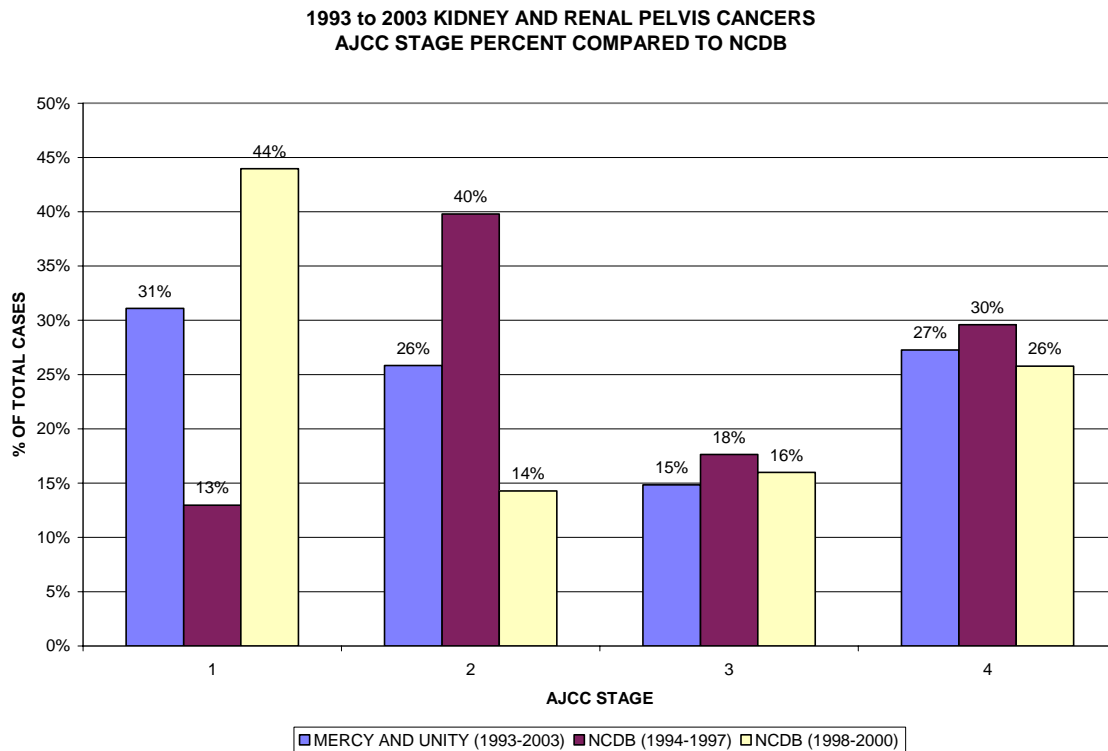


Figure 2

Treatment:

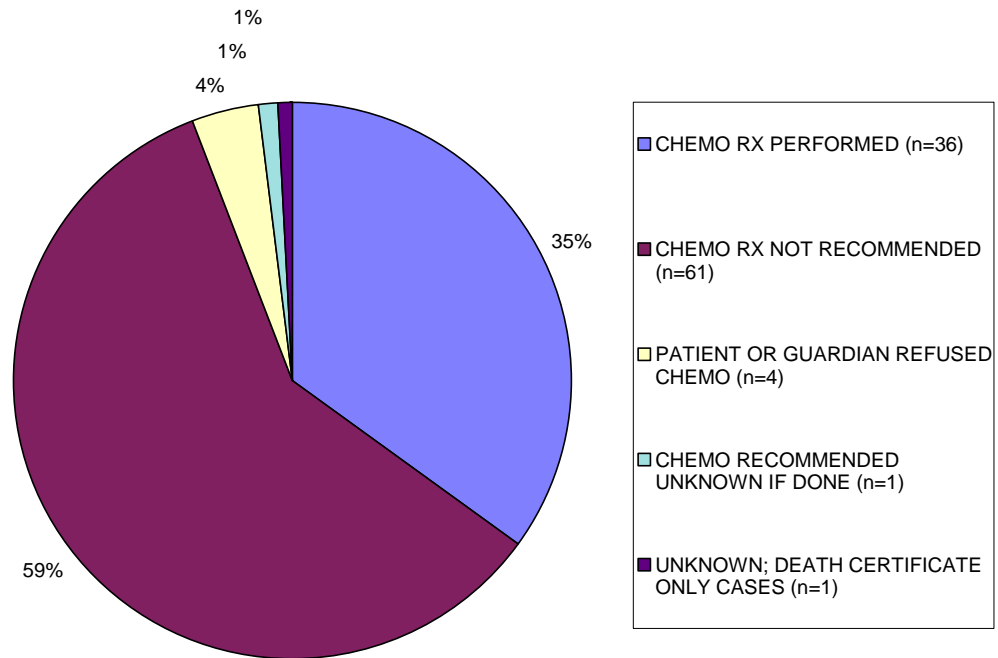
Important predictors are age, grade, ECOG status, and stage (nodal involvement).

- Local treatment (surgery) from Stage 1-3 or cryoablation.
- Surgery for Stage 4 disease and solitary mets is also recommended for palliation and improved survival.

Below is a link to the NCCN Guidelines for treatment of Kidney cancer.

http://www.nccn.org/professionals/physician_gls/PDF/kidney.pdf

Chemo Information - Stage IV Kidney and Renal Pelvis (n=135)



Systemic Treatment:

- Before 2005, high dose interleukin 2 (response rate was 15%) interferon (response rate was 15%), chemotherapy (response rate was less than 10%).
- Since 2006, targeted agents: Sutent, Nexxavar (both 40% response rate), Temsorilimus, bevacizumab.

Future directions:

- The landscape is changing. Newer and better medications are available.
- More tolerable for older patients.
- Orally available, hence more convenient, but expensive, so will be challenging for long-term therapy.

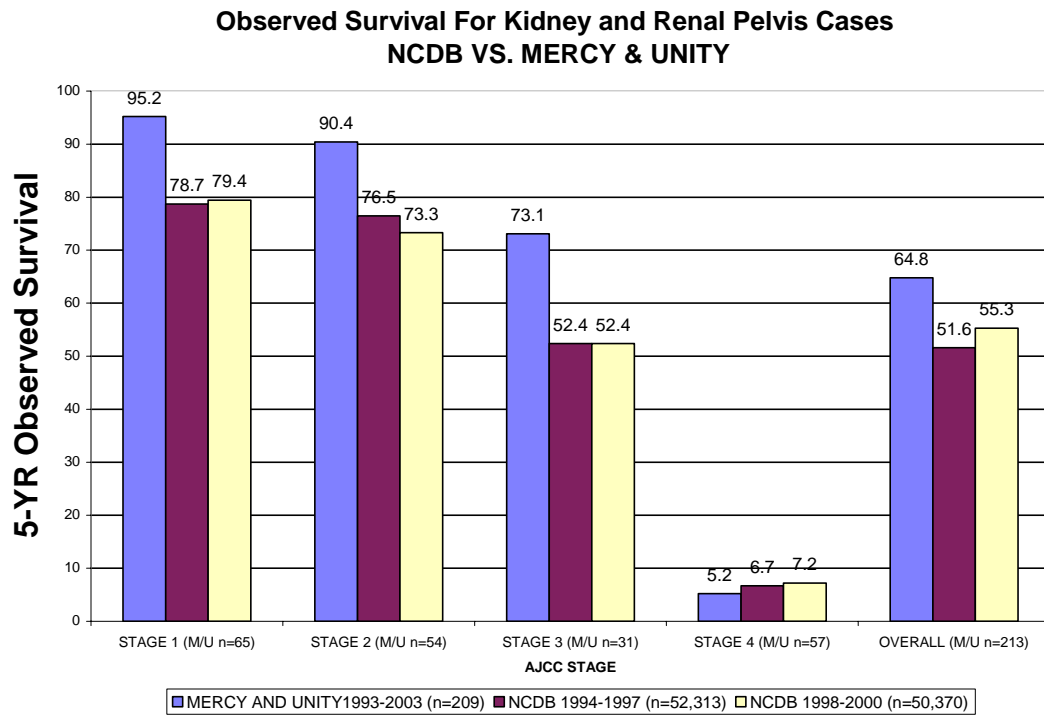


Figure 4

Outcomes:

Figure 4 shows 5-year observed patient survivals by stage for kidney cancers. The Mercy and Unity and NCDB data cover the same years that are reviewed with the staging data. The overall survivals at Mercy and Unity compare favorably with the national results. The survivals by stage are also similar among all the patient populations. In Stage IV, one-third of Mercy and Unity patients were over age 70.

5 year disease-free survival:

- Stage 1 [T1 N0 M0] is 95%
- Stage 2 [T2 N0 M0] is 88%
- Stage 3A [T3a-c N0 M0] is 60%
- Stage 3B [T1-3a-c N1 M0] is 20%
- Stage 4 [any T, any N, M1] is 20%