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Pregnancy after renal transplantation

# INTRODUCTION

- in renal failure we can see hormonal modifications:
- severe hypothalamic, pituitary gonadal dysfunctions
- FEMALE :
- Fertility is impaired, creatinine  $> 3$  mg %
- 10 % regular menses.
- 40 % amenorrheic.
- Progesterone, estrogen are normal in the follicle phase .
- 90 % elevated prolactine.

- MALE :
- Impotence
- Decreased libido
- Spermatogenesis is defective and testicular atrophy
- Free and total plasma testosterone are low
- Luteinizing hormone (LH) is increased
- Follicle stimulating hormone (FSH) is normal
- Pituitary function is intact
- Hypothalamic dysfunction

# 1-Pregnancy in women in CRF pre- hemodialysis :

- fertility is impaired with creatinemia 3mg/100ml
- Regular menses 10%
- ammenorrhic 40%
- progesterone, estrogene are normal in the follicular phase .
- 90% elevated prolactin

# complications

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- **In mothers:** increased proteinuria , developing hypertension , edema.
- control of hypertension and preeclampsia in the mother may affect the **fetus** and causes:
  1. Abortion.
  2. high risk of prematurity.
  3. IUGR .
  4. low fetal survival .

## 2-Pregnancy in patients on dialysis :

- 1.5-2% Pregnancy after 2-4 years in HD .

## *The modification in HD:*

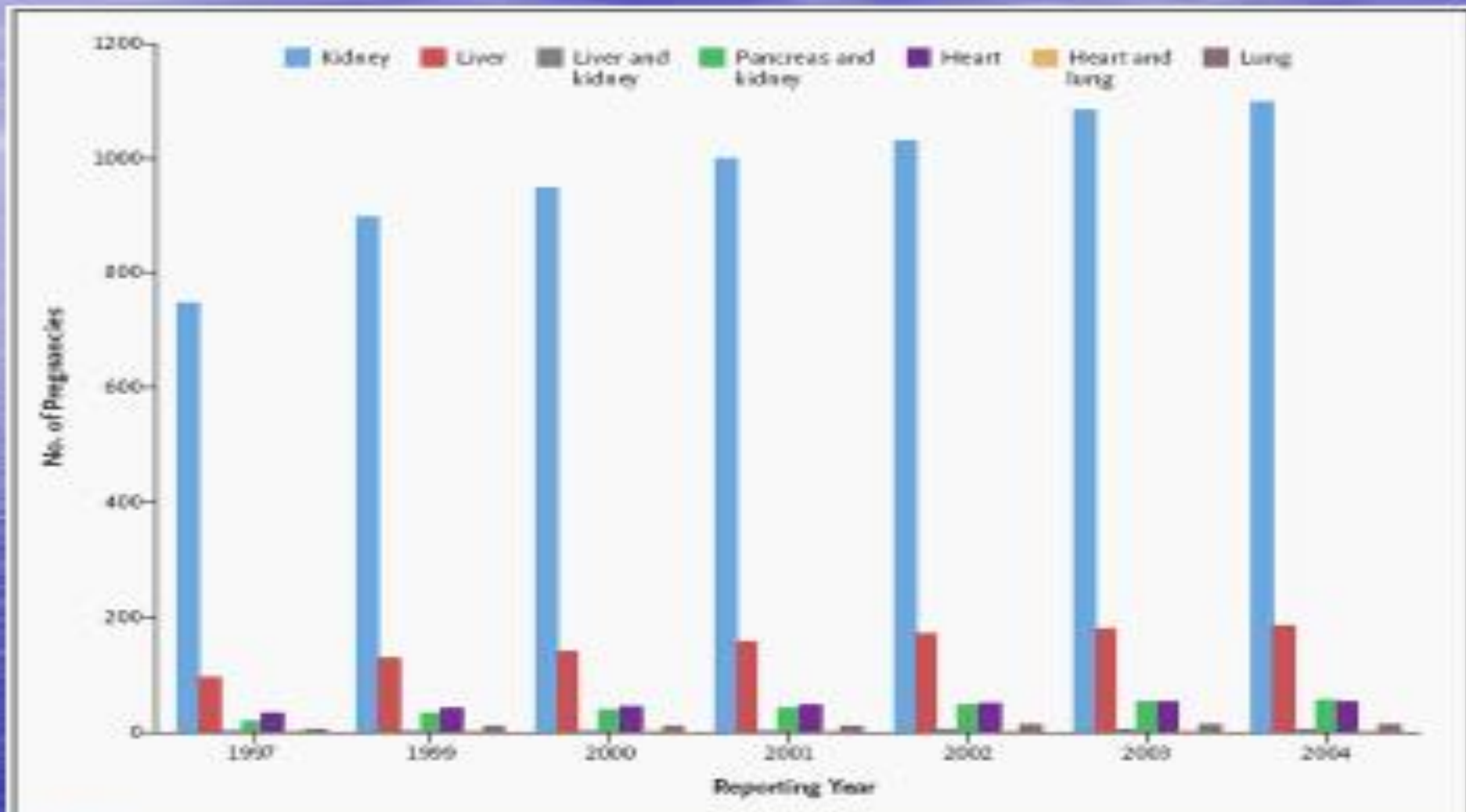
- 1-increase dialysis time :20 hours /week .
- 2-dry weight
- 3-drugs toxicity (ACEI-ARBs ) change to safe drugs (alfa methyle dopa, CCB, hydralazine).
- 4-HB 10-11G/L
- 5- control hypertension
- 6-preeclampsia
- 7-close monitoring of fetal well being (24 week)

## 3- PREGNANCY AFTER RENAL TRANSPLANTATION

- Successful kidney transplantation results in a return to normal hormonal function and fertility within 6 months in approximately 90% of women of childbearing age .



# McKay, DB et al, NEJM 2006



**Figure 2.** Number of Pregnancies Reported to the National Transplantation Pregnancy Registry in Recipients of Kidney Transplants and in Recipients of Other Organ Transplants.

The number of pregnancies in kidney-transplant recipients far exceeds that in recipients of other organs.<sup>7,18,20-24</sup>  
Data were not reported in 1998.

# Conditions that allow pregnancy

1. Good health and stable kidney function for 1-2 years after renal transplantation .
2. no recent acute or ongoing rejection or infection .
3. absent or minimal proteinuria (less than 0.5g\L
4. normal BP or easily managed hypertension .
5. no evidence of pyelocalcyeal distention on US before conception .
6. serum creatinine less than 1.5mg\dl .

- Drug therapy: (predinone 15mg or less per day)  
(imuran 2mg/kg or less per day)  
(cyclosporine 5mg/kg or less per day)

# The complications during pregnancy :

- ***1-maternal complications:***

A. Corticosteroid therapy.

B. Impaired glucose tolerance .

C. Hypertension (47-74% ) .

D. Preeclampsia 30% .

E. Infections (CMV, Herps, UTI).

F. Acute rejection .

G. Chronic rejection .

H. Urinary obstruction

- ***2-fetal complications :***

- A. High preterm delivery .
- B. IUGR
- C. Low birth weight
- D. Hypoxia
- E. Glucose metabolic disorders
- F. Spontaneous abortion
- G. Congenital malformation
- H. Adrenocortical insufficiency

# Outcome of pregnancy

- **1- clinical outcome** : BP, weight, edema, ectopic pregnancy, acute rejection ,renal biopsy
- **2-Laboratory outcome**: renal fuction, liver function test, diabetes
- **3-Fetus outcome**: periodic evaluation ,US preterm labor, premature rupture of membranes polyhydramnios, IUGR

# Drugs side effects

- The classification of drugs in pregnancy after renal transplantation :
- Category (A) no risk in controlled studies .
- Category (B) no evidence of risk in human (corticosteroid)
- Category (C) risks cannot be ruled out .(most drugs are included in this category )
- Category (D) positive evidence of risk.
- Category(X) contraindicated

## Side effects :

- **Corticosteroid** :**In fetus**
  - A. cleft palate
  - B. GR
  - C. low birth weight
  - D. congenital malformation
- **In mother** : osteoporosis, aseptic necrosis of femoral bone



- **Azathioprine**: leukopenia, GR, Congenital malformation .
- **Calcineurine inhibitors**: prematurity and low birth weight and adjustment of dose
- **Monoclonal anti body** is safe .
- **Sirolimus, Mecophenolate mofetile and Antilymphocyte globulin** are contraindicated .

- **Birth**

- vaginal delivery is safe

- cesarean section should be performed only for obstetrical indications increasing corticosteroid dose in labor

- **Breast feeding**

# Pregnancy Outcome following Kidney Donation:

- examining pregnancy outcomes after kidney donation in young women of childbearing age suggests these women have a lower risk for full-term deliveries, and higher risk for fetal loss, and developing gestational diabetes ,gestational hypertension, and preeclampsia during pregnancy.

THANK YOU