

Potential child bearing donors

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GUIDELINES

No recommendations possible based on Level I or II evidence

SUGGESTIONS FOR CLINICAL CARE

(Include information and suggestions based on level III and IV evidence)

- There is no evidence of increased problems with fertility or pregnancy complications in female donors
- Renal function and blood pressure should be monitored closely during pregnancy in previous kidney donors
- Potential female donors of child-bearing age should have a BHCG performed prior to further investigations
- The long-term renal function of female donors following pregnancy compared to other groups of donors is not known

Background

A frequent question of potential donors of childbearing age is whether donation will affect the ability to have a normal pregnancy. Furthermore there is a theoretical concern that increased renal blood flow and GFR during pregnancy could be deleterious to a solitary kidney.

Search strategy

Databases searched: Databases searched: MeSH terms and text words for kidney transplantation and living donor were combined with MeSH terms and text words for pregnancy. The search was carried out in Medline (1966 – September Week 2 2006). The Cochrane Renal Group Trials Register was also searched for trials not indexed in Medline.

Date of search: 26 September 2006.

What is the evidence?

The largest study (Wrenshall et al, 1996) is a retrospective questionnaire of female donors. Of 144 respondents (65%) the self-reported incidence of infertility and miscarriage was no different to those previously reported in a normal population. Preeclampsia was self-reported in 4.4% of donors (approximate normal population incidence 6-8%). There was no data on renal function and the true incidence of problems may have been underestimated because of the need for self-reporting.

A retrospective review of 39 pregnancies (32 live births) (Buszta et al, 1985) in 23 women who had previously donated kidneys did not demonstrate any significant incidence of hypertension or proteinuria during the pregnancies.

Ibrahim H et al (abstract ATC 2007) reported on the outcome of 216 donors who had at least 1 pregnancy after donating a kidney. 939 of 1537 female donors attending one centre responded to a survey regarding pregnancy. 23% (n=216) had at least one pregnancy after donation. The mean time from donation to pregnancy was 6.5 ± 4.6 years and the mean age at pregnancy was 31 ± 5 years. The percentage of live births in former kidney donors was similar to the general population (78% vs 75%) as was the rate of fetal loss. There was no control group for this study.

During pregnancy right ureteral dilatation occurs more commonly than left and is thought to mainly be physiological. Ureteral obstruction during pregnancy that requires intervention is extremely uncommon but would obviously be of more serious consequence with a solitary kidney. A retrospective review of 92836 pregnancies (Carey et al) found 6 cases of symptomatic ureteral obstruction. A series of 6275 pregnancies (Jarrad et al, 1996) found only 5 cases of obstruction requiring placement of stents and in 4 stones were the cause of the obstruction. Overall the reported incidence therefore is between 0.007 and 0.07%.

Summary of the evidence

(Summarise the evidence and outline any draft recommendations in the text. Present the evidence in the Table templates provided and place these in the Appendices section)

The available evidence comes from retrospective case reviews and donor surveys. The findings indicate that donors experience infertility and miscarriage rates similar to the normal population. The incidence of hypertension and proteinuria during pregnancy is also similar to that for the normal population. The reported incidence of ureteral obstruction during pregnancy requiring intervention is very low.

What do the other guidelines say?

Kidney Disease Outcomes Quality Initiative:

UK Renal Association: No recommendation.

Canadian Society of Nephrology:

European Best Practice Guidelines:

International Guidelines:

United Kingdom Guidelines for Living Donor Kidney Transplantation: The presence of a solitary kidney does not appear to pose a significant risk during the course of a normal pregnancy. However, close follow-up is advisable in donors during pregnancy and periodic assessment of serum creatinine and creatinine clearance in addition to urine culture and blood pressure should be undertaken.

Amsterdam forum on the care of the live kidney donor 2005: It was recommended to delay pregnancy until at least 2 months after nephrectomy to assess renal compensation prior to conception with evaluation including blood pressure, GFR and assessment for microalbuminuria. The emphasis was to verify that postpartum renal function is normal.

Implementation and audit

No recommendation.

Suggestions for future research

Prospective follow-up of pregnancy outcome and long term renal outcome via the national living donor registry.

References

Buszta C, Steinmuller DR, Novick AC et al. Pregnancy after donor nephrectomy. *Transplantation* 1985; 40: 651-654.

Carey MP, Ihle BU, Woodward CS, Desmedt E. Ureteric obstruction by the gravid uterus *Am J Obstet Gynaecol* 1989; 29: 308-313.

Jarrard DJ, Gerber GS, Lyon ES. Management of acute ureteral obstruction in pregnancy ultrasound guided placement of ureteral stents *Urology* 1993; 42: 263-268.

Ibrahim HN, Rogers TB, Matas AJ: Outcomes of Pregnancy Post Kidney Donation Abstract 267 American Transplant Congress, 2007

Report of the Amsterdam forum on the care of the live kidney donor: data and medical guidelines *Transplantation* 2005; 79: S53-S66.

Wrenshall LE, McHugh L, Felton P et al. Pregnancy after donor nephrectomy transplantation 1996; 62: 1934-1945.

Appendices

Table 1. Summary table of included studies

Study ID	N	Setting	Study methods	Results	Main findings	Comments
Buszta et al 1985	23	University Hospital, US	Retrospective review of prenatal and delivery records	39 pregnancies in 23 women. 1+ proteinuria 9%, trace proteinuria 30% - proteinuria disappeared in all patients postpartum,	After donor nephrectomy, women can have a normal pregnancy without significant problems.	Follow up evaluation for 13/23 women.
Wrenshall et al 1996	220	Nephrology clinic, US	Retrospective questionnaire	45 pregnancies in 33 women. Miscarriage 13.3%, preeclampsia 4.4%, gestational hypertension 4.4%, proteinuria 4.4%, tubal pregnancy 2.2%	Results comparable with general population, donor nephrectomy is not detrimental to potential child-bearing donors.	Response rate 144/220 (65%)