

## Selected Summaries

### Risk of pre-eclampsia after kidney donation: Primum non nocere

Garg AX, Nevis IF, McArthur E, Sontrop JM, Koval JJ, Lam NN, Hildebrand AM, Reese PP, Storsley L, Gill JS, Segev DL, Habbous S, Bugeja A, Knoll GA, Dipchand C, Monroy-Cuadros M, Lentine KL, for the Donor Nephrectomy Outcomes Research (DONOR) Network. (Institute for Clinical Evaluative Sciences, London Kidney Clinical Research Unit, Lawson Health Research Institute, and the Division of Nephrology, Departments of Medicine, Epidemiology, and Biostatistics, Schulich School of Medicine and Dentistry, Western University, London, Ontario; Division of Nephrology, Department of Medicine, University of Manitoba, Winnipeg; Division of Nephrology, Department of Medicine, University of British Columbia, Vancouver; Division of Nephrology, Department of Medicine, University of Ottawa, Ottawa; Division of Nephrology, Department of Medicine, Dalhousie University, Halifax, Nova Scotia; and Department of Surgery, University of Calgary, Calgary, Alberta—all in Canada; the Renal-Electrolyte and Hypertension Division, Perelman School of Medicine, University of Pennsylvania, Philadelphia; Department of Surgery, Johns Hopkins University School of Medicine, Baltimore; and the Center for Outcomes Research and the Division of Nephrology, Department of Medicine, Saint Louis University, St Louis—all in USA.) Gestational hypertension and preeclampsia in living kidney donors. *N Engl J Med* 2015;**372**:124–33.

#### SUMMARY

Altruistic donation of a kidney, a paired organ, has been seen as an acceptable way of giving a new lease of life to patients with end-stage kidney failure. Living donors must undergo a stringent process of evaluation and meet several criteria to be labelled as 'healthy' before they can be accepted in a transplant programme. Concerned that the care of the donor needed to be standardized, the Transplantation Society organized the Amsterdam Forum on the Care of the Living Donor,<sup>1</sup> which provided guidance on how to work-up living donors.

Thanks to some recent publications based on long-term follow-up of living donors and comparison with carefully selected healthy non-donor cohorts, the safety of live kidney donation is being investigated afresh.

In this publication of the Ontario, Canada-based Donor Nephrectomy Outcomes Research (DONOR) network, Garg and colleagues matched 85 women who donated a kidney between 1992 and 2010 with 510 healthy non-donor women from the general population in a ratio of 1:6. They collected data on 131 and 788 pregnancies in the two groups, respectively, after cohort entry. The groups were well-matched with respect to age, age at entry into the cohort, rural/urban residency, income, number of pregnancies before entry and time to first pregnancy.

They found that in-hospital diagnosis of pre-eclampsia and gestational hypertension was more common among donors (11% v. 5%, odds ratio 2.5, 95% CI 1.2–5,  $p=0.01$ ). The difference was present for both components separately as well (odds ratio, 2.5 for gestational hypertension and 2.4 for pre-eclampsia). There was no difference, however, in the rates of low birth-weight (8% and 7%) or preterm deliveries (6% and 4%). There were no maternal deaths,

stillbirths or neonatal deaths among the donors. Most women had uncomplicated pregnancies after donation.

As expected, gestational hypertension or pre-eclampsia was associated with an increased likelihood of caesarean section or low birth-weight in both donors and non-donors. They also performed additional analysis that eliminated the health restrictions in the non-donor group before cohort entry but continued to match eligible non-donors with donors on the basis of baseline characteristics, and showed that the increased risk of the primary outcome among donors persisted (11% v. 4%), with a higher odds ratio, 3.2 (95% CI 1.5–6.8;  $p=0.002$ ).

The authors concluded that gestational hypertension or pre-eclampsia was more likely in kidney donors than in matched non-donors with similar indicators of baseline health.

#### COMMENT

The success of organ transplantation as an enterprise depends primarily on the availability of transplantable organs. Deceased donors are the commonest source of organs worldwide. However, shortage of deceased donors forces the use of living donors. In parts of the world with immature deceased donor transplant programmes, living donors form the bulk of kidney and even liver donors.

The DONOR network, funded by the Canadian Institute of Health Research, has come out with a series of publications looking at the risk of development of complications following donor nephrectomy.

The authors have done well to do a careful matching of donors and non-donors and a total manual review of all charts to get rid of uncertainties. As the authors note, this study suffers from the drawbacks of any retrospective study, in particular absence of some data that could be important, and uncertainty of differential application of clinical judgement between donors and non-donors when making a diagnosis.

These data are consistent with previous studies from the USA and Norway,<sup>2,3</sup> and seem to suggest that the recommendations of the Amsterdam Forum on care of living donors need to be reviewed. It must be pointed out, however, that the report of the Forum preceded the appearance of these publications.

Pre-eclampsia is known to independently increase the risk of development of cardiovascular disease, hypertension and chronic kidney disease later in life. In the case of kidney donors, the independent contribution of pre-eclampsia over the risk that might be conferred by the loss of kidney function secondary to donation itself is extremely hard to discern.

This paper and others that have been published in the past couple of years provide valuable information, which all potential donors need to be made aware of before they can make an informed and potentially life-changing decision of donating a kidney. Two recent studies<sup>4,5</sup> have shown a 10-fold increase in risk of development of end-stage kidney disease among kidney donors. The robustness of these conclusions have been challenged on methodological grounds<sup>6</sup> but they do raise concerns that need to be debated and addressed in carefully designed longitudinal cohort studies with adequate sample size.

A decision that a physician does not want to make is putting a perfectly healthy individual (which a donor is, by definition) at an unnecessary short- or long-term risk. The psychological benefit of

doing good to a fellow human needs to be weighed against all potential risks—in this case unique to women, the weaker gender at least in developing societies.

In the rush to transplant more and more patients with end-stage kidney failure, the woman donor usually receives the short shrift, treated only as a source of a kidney. Often she is assured in a casual manner that donation poses no risk and that she can expect to live a life she has a right to expect had she not volunteered to be a donor.

These recent publications are of particular importance to societies where most donors do not have access to good quality medical care.<sup>7,8</sup> This makes them even more vulnerable to the potential ill-effects of organ donation. It is time that all transplant centres established 'donor advocates' who are primarily responsible for the welfare of the donor and provide them with all the information they need before deciding to become a live kidney donor.

## REFERENCES

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VIVEKANAND JHA

*Department of Nephrology*

*Postgraduate Institute of Medical Education and Research*

*Chandigarh*

*vjha60@gmail.com*

## Community health worker-based intervention for diabetes care: Feasibility and cultural acceptability in India

Palmas W, Findley SE, Mejia M, Batista M, Teresi J, Kong J, Silver S, Fleck EM, Luchsinger JA, Carrasquillo O. (Columbia University Medical Center, New York; Columbia University Mailman School of Public Health, New York; Alianza, New York; Research Division, Hebrew Home for the Aged at Riverdale, Bronx, New York; Columbia University, New York; Division of General Internal Medicine, University of Miami Miller School of Medicine, Miami, Florida, USA.) Results of the Northern Manhattan Diabetes Community Outreach Project: A randomized trial studying a community health worker intervention to improve diabetes care in Hispanic adults. *Diabetes Care* 2014;**37**:963–9.

### SUMMARY

A randomized controlled trial evaluated whether a community health worker (CHW)-based intervention could improve clinically relevant markers of diabetes care in an adult underserved Hispanic community in Manhattan, New York, USA. The primary outcome was glycosylated haemoglobin (HbA1c) while the secondary outcomes were systolic blood pressure (SBP), diastolic blood pressure (DBP) and low-density lipoprotein (LDL)-cholesterol. Outcomes were measured at baseline and at the end of one year. The lifestyle intervention was based on the 'small steps, big rewards' programme, which included dietary modification and increasing physical activity to decrease the progression of high-risk individuals to diabetes. Participants included underserved Hispanics receiving care at one of the designated primary care centres under Columbia University Medical Centre, aged 35–70 years, with poor glycaemic control (HbA1c >8%). The study excluded

those with type 1 diabetes, diabetes with onset before the age of 25 years, diagnosed for less than one year, any extreme medical comorbid condition, arm circumference >47 cm, planning to move out of the neighbourhood during the next year or those enrolled in any other ongoing study.

The participants were remotely randomized within each primary care-provider using statistical package SAS by an operator who was blinded to all participant characteristics except being aware of the provider. The intervention arm provided four one-to-one visits in the first 2 months, followed by monthly group sessions and follow-up phone calls in the remaining 10 months, whereas the control arm provided usual care along with educational material in Spanish and quarterly phone calls. Analysis was done using SAS software. The longitudinal mixed effects model was used and intention-to-treat analysis was done using multiple imputation sensitivity analysis. Of the 181 participants randomized to intervention and another 179 to the control arm, 18.8% and 12.3%, respectively were lost to follow-up. No clinically meaningful differences between the study groups were found at baseline. In the intervention arm, a median of 3 (interquartile range 4–2) one-on-one meetings, 0 (4–0) group sessions, and 10 (14–7.5) phone calls were conducted. However, 93 participants received only a phone-based intervention.

Although the primary outcome, HbA1c, showed a trend towards reduction, neither primary nor secondary outcomes differed significantly between the intervention and control arms. The number of phone calls, however, showed an association with a reduction in HbA1c levels ( $p=0.04$ ). With regard to change in HbA1c, similar effects of the intervention were seen in those who had optimal glycaemic control (baseline HbA1c <7%,  $n=46$ ) versus those who did not (baseline HbA1c  $\geq 7\%$ ,  $n=314$ ). The results of sensitivity analyses that compensated for missing data through different models did not vary substantially from the intention-to-treat findings.

### COMMENT

This well-rationalized study evaluated the interventions led by CHWs, which is likely to be the fulcrum of many programmes for