We thank Dr. Khan, et al, for reading our study with interest. Unfortunately, all references presented in Khan’s letter are retrospective studies and none are evidence-based or randomized clinical studies. There are several prospective and randomized clinical studies that have shown longer warm ischemia in the time presented, and most laparoscopic donor nephrectomy studies do not translate into graft outcomes when laparoscopic donor nephrectomy is compared with open donor nephrectomy. Some authors have shown not only similar, but even better, outcomes when comparing laparoscopic donor nephrectomy to open donor nephrectomy in short-term and long-term randomized clinical studies. Five-year death-censored graft survival in a randomized clinical study reported by Dols and associates was 90% positive for a laparoscopic donor nephrectomy, while it was only 85% positive for an open live-donor nephrectomy using a 10- to 12-cm incision. In a prospective and comparative analysis of 3 different approaches for live-donor nephrectomy, Mitre and associates showed that even the warm ischemia time and acute tubular necrosis were higher in the laparoscopic groups compared with the open groups, but graft survival was similar among all groups.

In a literature review, Facundo and associates found that a higher warm ischemia time is not related to delayed graft function when it is less than 10 minutes. Delayed graft function does not differ between an open and laparoscopic group from the first month until the third year after transplant, showing no difference in randomized studies. Greco and associates reviewed more than 50 comparative studies including open laparoscopy and hand-assisted laparoscopy, and concluded that even warm ischemia times were longer in the laparoscopic groups; postoperative graft function was not significantly different between these 3 techniques. In a retrospective study, Goel and associates reported significantly better long-term graft outcomes in laparoscopic donor nephrectomy compared with open donor nephrectomy.

Kurien and associates compared standard laparoscopic donor nephrectomy and laparoendoscopic single-site donor nephrectomy in a randomized study, and showed that warm ischemia time was longer in laparoendoscopic single-site donor nephrectomy group, but that this did not translate into graft outcome (first prize article).

Khan and associates failed to present any study demonstrating the true limit of warm ischemia time considered safe with a healthy kidney. In 1 prospective study, Simforoosh and associates showed that a warm ischemia time to 17 minutes failed to have any deleterious effects on the graft retrieval from a healthy donor. (This study was the award winner as “best laparoscopic paper” in the 24th World Congress of Endourology, 2004).

We believe what is dangerous is to endanger a donor’s health and the surgical quality of the graft for few minutes longer warm ischemia time, not proven harmful in any randomized clinical study presented in our study. This is usually the case for those who are learning to perform a laparoscopic donor nephrectomy in academic settings, like academic fellows. Our recommendation about warm ischemia time, which agrees with many other studies, will encourage more surgeons to start learning and performing laparoscopic donor nephrectomy to decrease the morbidities seen in open donor nephrectomy, without jeopardizing graft outcomes.
One should consider several factors leading to delayed graft function and poor graft outcomes, like donor age and the quality of the donated kidney. Prolonged renal arterial spasm during open donor nephrectomy can lead to intraoperative acute tubular necrosis. This usually happens during open donor nephrectomy: the operating surgeon tries to perform surgery with smaller incision to compete with a laparoscopic donor nephrectomy. This might lead to untoward traction on the artery leading to arterial spasm and possible renal injury.

We and others have shown that laparoscopic donor nephrectomy at most centers demonstrates excellent short-term and long-term graft outcomes, despite few minutes longer warm ischemia time reported for a laparoscopic donor nephrectomy, with less morbidity to the donor.\textsuperscript{1-4} One should not endanger the graft or the donor for few minutes longer warm ischemia, during the time shown safe in randomized clinical studies in large, laparoscopic donor nephrectomy series with long-term results.

References