OBJECTIVES
The incidence of chronic kidney disease (CKD) has reached pandemic proportions across the world. Critical limb ischaemia (CLI) in the CKD patient is a huge clinical challenge often culminating in major amputation or mortality. Endovascular revascularization is sometimes not feasible due to potential contrast induced damage to the residual renal function, while heavy calcification may limit the success of such interventions. Surgical revascularization in these patients also carry added challenges and risks with seemingly poor outcomes in terms of limb salvage. Our primary aim was to establish the safety and success of open revascularization in these patients with CKD complicated by CLI.

METHODS
A prospective single centre cohort study (December 2014- December 2018) was done to evaluate the outcome of primary open surgical revascularization for CLI in those with CKD (Group 1= eGFR 15-90), End Stage Renal Failure; ESRF (Group 2 = eGFR<15) and those with preserved renal function eGFR>90 (Group 3). All patients with isolated tibial occlusive disease having no access to or had contra-indications to endovascular intervention were considered. The inflow was the popliteal artery while the outflow was either the distal posterior tibial or anterior tibial (dorsalis pedis) depending on luminal patency. Surgical procedure was carried out by a single surgeon and involved reversed saphenous vein grafting. Those with overwhelming sepsis warranting primary amputation and those who were considered medically unsuitable for surgical intervention due to advanced comorbidity were excluded.
RESULTS
149 consecutive surgical revascularizations were performed (Group-1, 62; Group-2, 28; Group 3, 59). The baseline demography of the patient cohort was comparable among the groups. There were no perioperative mortalities (day-0 to day-07) in this cohort. 17 patients were lost to follow-up after the initial month. Among those who completed the follow-up, the respective 6-month patient survival was (91%, 87% and 90%; p>0.05). The corresponding graft patency rates between Group-1 and 3 were (84%, and 91%; p= >0.05) while limb salvage rates (89% v 92%; p>0.05). Group-2 showed a significant decline in both graft patency (71%) and limb salvage (68%) compared to the other two groups. Four patients (2 in Group-1, 2 in Group-2) had below knee amputations with a functioning graft due to advancing sepsis.

CONCLUSION
The presence of advanced CKD including ESRF should not be considered a limiting factor when considering surgical revascularization for CLI. Where advanced endovascular interventions are not possible or unavailable, open revascularization should always be considered as a limb salvaging option. While meticulous planning and care is needed to overcome the added clinical challenges, the resulting limb salvage rates have been very encouraging.

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