- My name is Thomas Zeller from the University Heart Centre, Freiburg-Bad Krozingen, in Germany. And I'm going to talk today about the outcome of the IN.PACT global study sub-cohort dealing with critical limb ischemia.

Study Design and Patient Population

The IN.PACT global study was a prospective multicenter study investigating the performance of the IN.PACT Admiral drug-coated balloon in femoropopliteal lesions. It's a kind of all-comers study, so there have been only a few exclusion criteria like acute thrombosis and aneurysm disease. Besides that, any kind of SFA and popliteal lesion could be included, including in-stent lesions, and long distant calcified total occlusions. And the background of this particular study I'm talking about today is basically that part of the patient population, which was enrolled into the study was suffering from critical limb ischemia, Rutherford category 4 and 5, which means rest pain and small wounds. And this is a small part of about 10% of the entire patient population, which comprised of about 1500 patients. And the CLI sub cohort includes 150 patients in total.

Importance of this Cohort

To date, we have only very limited information about the performance of drug-coated balloons in patients suffering from critical limb ischemia. Most studies, in particular dealing with femoropopliteal lesions, were really dedicated to patients suffering from claudication, and we have no solid data regarding technical and clinical outcome in long-term in patients suffering from SFA and popliteal disease, and presenting with critical limb ischemia. And the study, the sub-cohort study of the IN.PACT global study is today one of the largest cohorts, where we get some additional information about the performance of drug-coated balloons in such kind of patients and lesions.

Key Findings

Well, basically if you look into the patient baseline characteristics, it's a typical difference between patients suffering from claudication and critical limb ischemia. Patients with critical limb ischemia are older, they are less frequent male. They have more concomitant diseases such as renal insufficiency and diabetes mellitus. And if you look into lesion details, the lesions in this sub cohort had been longer as compared to claudicants. We have seen more total occlusions and more popliteal involvement. If you look on the five-year clinical outcome, the technical end point of this study at five year, was freedom from clinically driven target lesion revascularization. And it was 70% for the claudicant cohort, and it was about 10% lower for the CLI cohort, means about 60%. And regarding safety, and this included major adverse events, rate detection, which comprised of all caused deaths, target vessel revascularization, and lesions thrombosis. The outcome was that basically survival in the CLI patient cohort was about 20% lower, as compared to the claudicants. So the mortality rate was about 37% in the CLI cohort, whereas it was only 17% in the claudicant cohort. And this is typical. And on the other hand, we have found a relatively low major amputation rate at five years of about 7% in the CLI cohort, which is lower as compared to what you can find in the literature.

Conclusions

The conclusion is somewhat limited by the study design because, per protocol, it was only allowed to include patients with Rutherford class 4. That means rest pain. The patients that are included into the up-to-date analyses have been more or less protocol deviations, meaning Rutherford 5 category patients shouldn't have been included into the study. This results in under-representation of the Rutherford category 5 patients in this analysis. So we have mainly Rutherford 4 category patients. And that means that the outcome of this study is not really representative for a real world CLI cohort, where we can see more patients suffering from non-healing wounds, from gangrene and from ulceration. Anyhow, it's important to note that even if patients are "only" suffering from rest pain and not having wounds, their outcome is significantly worse as compared to a claudicant population, in particular regarding overall survival.

Take-home Messages

Well, take home message from this study is that patients in every stage of critical limb ischemia deserve a close follow up. And this doesn't simply include vascular examination regarding their peripheral artery disease state, but regarding the increased risk of deaths, it should also include cardiac examination at an annual basis, in order to early detect significant coronary artery disease, but also looking on cerebral arterial disease in order to further improve this patient's survival.