













Ten-year trends of invasive coronary procedures from a single tertiary centre

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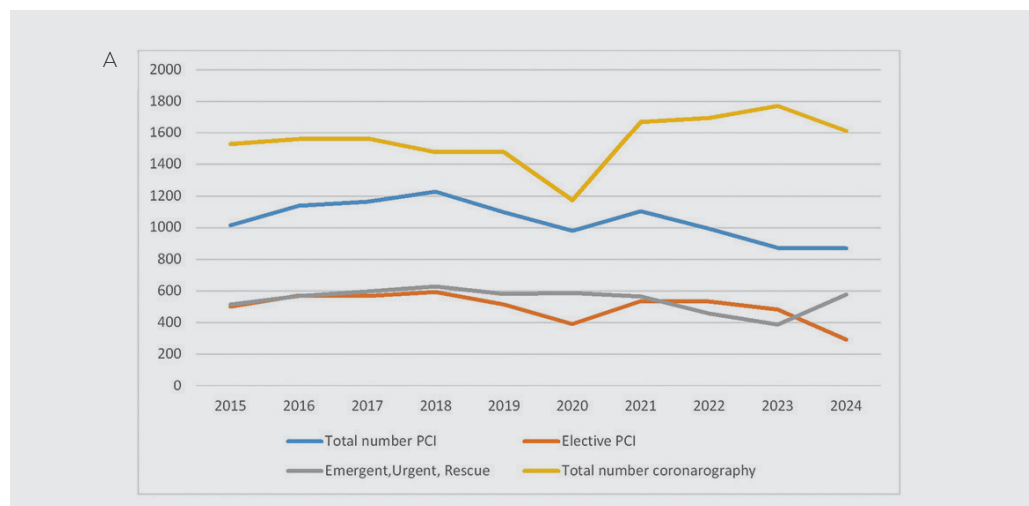
Introduction: Interventional cardiology transformed the treatment of coronary artery disease (CAD). The ongoing development of invasive imaging and functional diagnostic enhances the understanding of CAD and improves the outcomes of percutaneous coronary intervention (PCI). Likewise, new therapeutic options enable more patients to be treated. Although guidelines recognize these advancements, their application in practice is often lacking^{1,2}. This study aimed to analyze the trends of invasive procedure and implementation of novel technologies over the past decade in a tertiary care centre.

Patients and Methods: This single centre retrospective study included patients who underwent invasive procedure between 2015 and 2024. Data was collected from Cathlab database and analysed to identify trends in the utilization of invasive diagnostic modalities and types of interventions performed.

Results: Results are presented in **Figure 1**. A continuous rise in coronarographies and decline in, primarily elective PCI has been observed. At the same time, there was also an observable increase in the use of coronary functional testing ((fractional flow reserve (FFR), instantaneous wave-free ratio (iFR), coronary flow reserve (CFR)) and intracoronary imaging procedures ((optical coherence tomography (OCT), intravascular ultrasound (IVUS)). Likewise, the total number of complex PCIs, such as rotablation, and Impella/IVAC supported PCIs has been observed. Finally, increase in number of coronary flow reducer implantation has been observed.

Conclusion: A steady increase in contemporary diagnostic and therapeutic methods is observed in our centre. These trends indicate a more selective and precise approach in the management of CAD as recommended by current guidelines^{1,2}, which could potentially explain observed decline in elective PCI. Conversely, increase in rotablation and supported interventions may suggest that more complex patients are being accepted for PCI. Finally, the rise in coronary sinus flow reducer implantation indicates an unmet need for patients without revascularization options, including those with microvascular disease¹.

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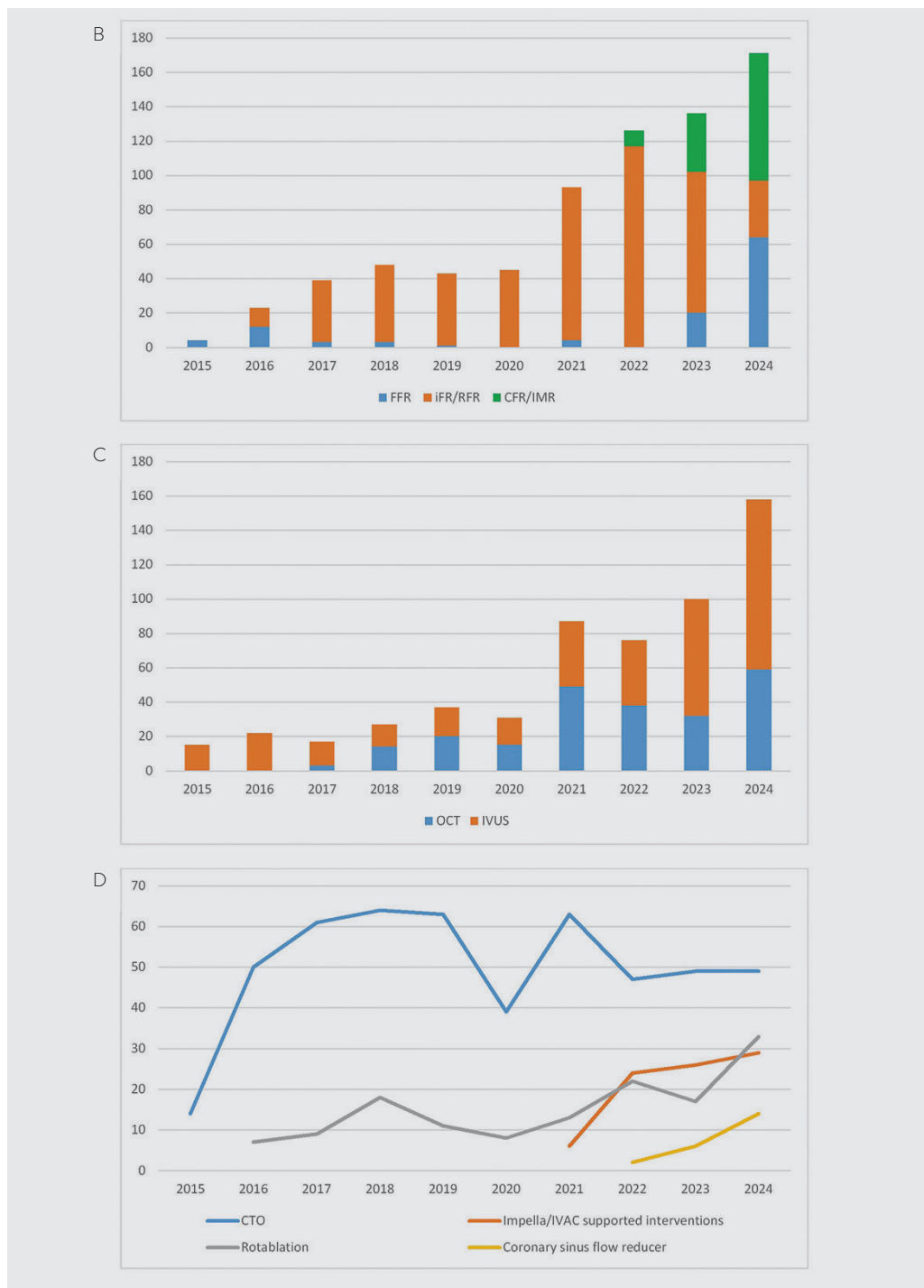


FIGURE 1. Trends in the various types of procedures, diagnostic techniques, and therapeutic methods throughout the study period. A) Total number of preformed coronary angiographies and percutaneous coronary interventions based on urgency; B) Number of complex interventions and coronary flow reducer; C) Number of coronary circulation functional testings preformed; D) Number of intracoronary imaging procedures. CFR - Coronary flow reserve; CTO – chronic total occlusion; FFR – fractional flow reserve; iFR - instantaneous wave-free ratio; IMR – index of microcirculatory resistance; IVUS – intravascular ultrasound; OCT - optical coherence tomography; PCI – percutaneous coronary intervention; RFR – resting full-cycle ratio.

LITERATURE

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