Clinical Study Proposal	
Study No.:	
Test Drug/Device:	veRy thin stents for patients with left mAIn or bifurcatioN in real life: the RAIN a multicenter study.
Title:	Last generation drug eluting stents; left main; bifurcation
Acronym:	RAIN
Clinical Phase:	IV
Sponsor:	
Funding address:	
Primary Investigators:	Dr. Fabrizio D'Ascenzo, Dr. Pierluigi Omedè, Prof. Christian Templin
Institution:	Division of Cardiology, University of Turin, Italy Universitaspital of Zurich
Date of Synopsis:	[1] January 2017
Version:	Draft 1
Planned Dates of Study:	First subject in: February 2017 Last subject out: June 2017
GCP Statement:	The study will be conducted in accordance with the ethical principles that have their origin in the Declaration of Helsinki and are consistent with ICH Good Clinical Practice as well as regulatory requirements
Confidential:	This protocol is the property of the PIs and may not – in full or in part – be passed on, reproduced, published or otherwise used without permission

SYNOPSIS

Study title	veRy thin stents for patients with left mAIn or bifurcatioN in real life: the RAIN a multicenter study.
Study population:	Consecutive patients treated with very thin stents on ULM and bifurcation
Rational for performing the study	For permanent coronary stents, reduction of thickness of struts have become one of the most important innovation, being related to easier manipulation, reduced risk of stent thrombosis and low rate of revascularization. The largest randomized controlled trial on this topic, the BIORESORT have shown promising results, with about 2% of revascularization at one year and less than 0.5% of stent thrombosis (1). Despite this, due to the randomized design of the study, less than 30% of the enrolled patients were treated with bifurcation and less than 2% with unprotected left main (ULM) consequently without enough power to detect potential significant difference for these lesions, which are strongly related to prognosis (2,3). Consequently we performed a multicenter registry enrolling all consecutive patients treated with very thin stents for ULM or bifurcation.
Study Endpoints:	MACE (a composite end point of death, myocardial infarction,target lesion revascularization and stent thrombosis) will be the primary end point, while its single

	components will be the secondary ones.

Follow up	At least 6 months
Sample size calculation	The BIO-RESORT (1) reported an incidence of TLR of 2% at one year. According to the work of Peduzzi et al (4), at least 1000 patients are needed to test impact of diabetes mellitus, kind of polymer (permanent vs biodebradable) and strategy of bifurcation as independent predictors of TLR.
Inclusion criteria:	- all clinical presentation - ULM stenosis - bifurcation stenosis - treated with: . biomatrix alfa . xience alpine . ultimaster . resolute onyx . synergy . promus
References	1- von Birgelen C, Kok MM, van der Heijden LC, Danse PW, Schotborgh CE, Scholte M, Gin RM, Somi S, van Houwelingen KG, Stoel MG, de Man FH, Louwerenburg JH, Hartmann M, Zocca P, Linssen GC, van der Palen J, Doggen CJ, Löwik MM. Very thin strut biodegradable polymer everolimus-eluting and sirolimus-eluting stents versus durable polymer zotarolimus-eluting stents in allcomers with coronary artery disease (BIO-RESORT): a three-arm, randomised, non-inferiority trialLancet. 2016 Nov 26;388(10060):2607-2617. 2- Xu B, Redfors B, Yang Y, Qiao S, Wu Y, Chen J, Liu H, Chen J, Xu L, Zhao Y, Guan C, Gao R, Généreux P. Impact of Operator Experience and Volume on Outcomes After Left Main Coronary Artery Percutaneous Coronary Intervention.JACC Cardiovasc Interv. 2016 Oct 24;9(20):2086-2093.

3- **S**ong YB, Park TK, Hahn JY, Yang JH, Choi JH, Choi SH, Lee SH, Gwon HC. Optimal Strategy for Provisional Side Branch Intervention in Coronary Bifurcation Lesions: 3-Year Outcomes of the SMART-STRATEGY Randomized Trial. JACC Cardiovasc Interv. 2016 Mar 28;9(6):517-26.

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7- Peduzzi P, Concato J, Kemper E, Holford TR, Feinstein AR. A simulation study of the number of events per variable in logistic regression analysis J Clin Epidemiol. 1996 Dec;49(12):1373-9.

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