

Appendix I. List of Abstracts (Author, Titles, Investigator Information) Included

#	Title	Investigator	Investigator Degree	Number of Co-Investigators	Institution	Institution Location
1	Should all patients be under intensive treatment?	Wenwen Zhang		0	Takeda Pharmaceuticals	Cambridge, MA United States
2	Individual patient data from SPRINT modeled for benefit harm balance demonstrates equivalence for blood pressure targets of 120 and 140 mmHg	Hélène Aschmann		0	University of Zurich	Zurich, ZH Switzerland
3	Individualizing treatment choices in SPRINT trial	João Pedro Ferreira	MD, PhD	2	Centre Hospitalier Universitaire de Nancy	Ludres, 54 France
4	Personalized antihypertensive therapy: using individual variation in population-level statistics to guide clinical decisions	Anish Patnaik		3	McGovern Medical School	Austin, TX United States
5	To Treat Intensively or Not – Individualized Decision Making Support Tool	Noa Dagan	MD, MPH	0	Clalit Research Institute	Tel Aviv, TA Israel
6	A Machine-Learning Model for Personalized Trial Data Exploration	Jochen Lennerz	MD, PhD	2	Massachusetts General Hospital and Harvard Medical School	MA, United States
7	Clinical Prediction Scores of Benefit and Harm from Intensive Blood Pressure Management	Jaejin An	BPharm, PhD	1	Western University of Health Sciences College of Pharmacy	Pomona, CA United States
8	Blood pressure-lowering treatment based on cardiovascular risk compared with systolic blood pressure	Johan Sundstrom	MD PhD	0	Uppsala University	Uppsala, C Sweden
9	Uplift Modeling to Personalize Intensive Blood Pressure Control	Francis Wilson	MD MSCE	0	Yale School of Medicine	New Haven, CT United States

10	Multivariate analysis enables personalized prediction of adverse heart and kidney outcomes	Gel Dinstag		2	Tel Aviv	Tel Aviv, TA Israel
11	Risk-Benefit Assessment of Intensive Blood-Pressure Control	Mikko Venäläinen	MSc	3	CompBiomedTurku	Turku, 19 Finland
12	Exploring heterogeneous treatment effects for stratified blood pressure treatment	Ludovic Trinquart		1	BUSPH Biostatistics	Boston, CA United States
13	Development and Validation of a Clinical Decision Score to Maximize Benefit and Minimize Harm from Intensive Blood Pressure Treatment	Sanjay Basu	MD, PhD	5	Stanford University	Stanford, CA United States
14	Personalized Balance of Benefits and Risks of Hypertension Treatment	Lin Li		1	Biostat Solutions, Inc.	Rockville, MD United States
15	The Treatment Effect of Intensive Blood Pressure Lowering May Follow an Inverted U-shaped Curve Related to Baseline Cardiovascular Risk	Marco Huesch	MBBS, PhD	0	Penn State's Milton S. Hershey Medical Center	Hershey, PA United States
16	Individualizing SPRINT. Going Beyond the Crowd	Nicole Jaspers	MD	5	UMC Utrecht	Utrecht, UT Netherlands
17	Identification of patients with high blood pressure who would benefit from intensive treatment	Yang Xie	PhD, MD	11	UT Southwestern Medical Center	Dallas, TX United States
18	Estimating personalized responses to lower systolic blood pressure targets: a machine learning-based causal analysis of the SPRINT Trial	Aron Baum	PhD	2	Icahn School of Medicine at Mount Sinai	New York, NY United States
19	Personalized blood pressure therapy in hypertensive patients: an analysis of the SPRINT trial	Jan van den Brand	PhD	0	Radboud University Medical Center	Nijmegen, GE Netherlands
20	Features that Predict Poor Outcomes in Hypertensive Non-Diabetic Patients – What Matters Most?	Ronilda Lacson	MD, PhD	5	Brigham and Women's Hospital	Boston, MA United States

21	Identifying Patients Who Do Not Benefit from Intensive Blood-Pressure Control in the Systolic Blood Pressure Intervention Trial (SPRINT)	David Cheng		0	Harvard School of Public Health	Boston, MA United States
22	Using Machine Learning to Personalize Blood Pressure Treatment	Kaveh Danesh		0	University of California, Berkeley	Berkeley, CA United States
23	Individualizing benefit and harm of intensive vs standard blood pressure control: an analysis of SPRINT data	Jacob Udell	MD, MPH	0	University of Toronto	Toronto, Canada
24	Machine learning identifies hypertension patients who do not benefit from intensive treatment	Ljubomir Buturovic		1	Clinical Persona Inc.	East Palo Alto, CA United States
25	Identifying a subgroup with a favorable benefit and risk balance under the intensive treatment	Yan Sun		1	Abbvie Inc	Lake Bluff, IL United States
26	Balancing Benefit and Harm of Intensive Antihypertensive Therapy	Maria Koh		5	Institute for Clinical Evaluative Sciences	Toronto, ON Canada
27	Development of a Prediction Rule for Benefit and Harm of Intensive Blood Pressure Lowering: The SPRINT Score	Manan Pareek	MD, PhD	3	Odense University Hospital	Odense, 83 Denmark
28	Systolic Blood Pressure Intervention Trial (SPRINT) Selection Tool	Janine Bauman	BSN	1	The HOLMES (Health Outcomes Linkage with Medical Electronic System) Team	Cleveland, OH United States
29	Prediction Risk Factors for significant eGFR decrease in patients without CKD, and a Possible Point System	Fei Tang	PhD	0	University of Miami	Miami, FL United States

Appendix II. Case Study Comparisons

Case 1 – High CV Risk Patient

Risk Calculation from Web/App Tools or Equation Provided													
ID	Efficacy Outcome	Safety Outcome	Efficacy and Safety Outcomes Combined	No. of Variables Used to Calculate the Risk	Time When Risk Calculated (in years)	AR of Efficacy from Standard Therapy (%)	AR of Efficacy from Intensive Therapy (%)	AR of Safety from Standard Therapy (%)	AR of Safety from Intensive Therapy (%)	ARR of Efficacy (Standard-Intensive, %)	ARI of Safety (Intensive-Standard, %)	Net Benefit (Benefit-Harm) from Intensive Therapy (%)	Interpretation/Recommendation for Intensive Therapy (Based on cutoff provided or NNH/NNT calculated)
6	-	-	Assume composite SPRINT and SAE outcome	5	Not Specified	0.05	0.06	0.56	0.64				No specific recommendation is provided
28	MI, ACS, Stroke, HF, CVD death, Death, AKI	Hypotension, Syncope, Bradycardia, ELYTE, fall, OHYPO-SX, OHYPO-ASX, Albuminuria	-	22	3.3								Color coding to differentiate difference between treatments, 5 levels
16	SPRINT composite outcome	-	-	8	5	2.76	2.1			0.67			iNNT>100 - Low benefit group

Risk Calculation from Clinical Scores Developed												
ID	Efficacy Outcome	Safety Outcome	Efficacy and Safety Outcomes Combined	No. of Variables Used to Calculate the Risk	Time When Risk Calculated (in years)	Benefit Score	Harm Score	Benefit and Harm Combined Score	ARR of Efficacy Outcome (Standard - Intensive, %)	ARI of Safety Outcome (Intensive - Standard, %)	Net Benefit (Benefit -Harm) from Intensive Therapy (%)	Interpretation/Recommendation for Intensive Therapy (Based on cutoff provided or NNH/NNT calculated)
7	SPRINT composite outcome	Composite of Hypotension, Syncope, Bradycardia, ELYTE, fall, AKI	-	9	3.3			4	2	2	0	Recommend Intensive Therapy
27	SPRINT composite outcome	Composite of Hypotension, Syncope, ELYTE, fall, AKI	-	9 for Efficacy/7 for Safety	Not Specified	5	4		-3			Recommend Intensive Therapy
23	SPRINT composite outcome	Composite of Hypotension, Syncope, Bradycardia, ELYTE, fall, AKI	-	9	3.3			quartile 2	1.29	1.62		Low benefit group. No specific recommendations.

Risk Category Classified from the Submission													
ID	Efficacy Outcome	Safety Outcome	No. of Variables Used to Calculate the Risk	Name the Variables Used to Categorize the Risk	Time When Risk Calculated (in years)	AR of Efficacy from Standard Therapy (%)	AR of Efficacy from Intensive Therapy (%)	AR of Safety from Standard Therapy (%)	AR of Safety from Intensive Therapy (%)	ARR of Efficacy (Standard-Intensive, %)	ARI of Safety (Intensive-Standard, %)	HR of Outcome (Intensive vs. Standard)	Interpretation/Recommendation for Intensive Therapy (HR of Intensive vs. Standard)
14	-	Hypotension, AKI	3	Framingham score, kidney disease, total cholesterol	Not Specified			Hypotension (3%), kidney disease (5%)	Hypotension (4%), kidney disease (7%)			HR benefit = 0.74; HR Safety = 1.28 for hypotension, 1.46 for Kidney Disease	Subgroup 1 (Low Harm, Benefit)
15	SPRINT composite outcome	-	3	clinical CVD, age, ascvd risk	Not Specified	13.1	11.6	3.5	6.4	1.5	3		Group D (High CV Risk but No Benefit)
17	SPRINT composite outcome	-	3		Not Specified							HR of benefit = 0.66	High risk

Case 2 – Low CV Risk Patient

Risk Calculation from Web/App Tools or Equation Provided													
ID	Efficacy Outcome	Safety Outcome	Efficacy and Safety Outcomes Combined	No. of Variables Used to Calculate the Risk	Time When Risk Calculated (in years)	AR of Efficacy from Standard Therapy (%)	AR of Efficacy from Intensive Therapy (%)	AR of Safety from Standard Therapy (%)	AR of Safety from Intensive Therapy (%)	ARR of Efficacy (Standard - Intensive, %)	ARI of Safety (Intensive - Standard, %)	Net Benefit (Benefit-Harm) from Intensive Therapy (%)	Interpretation/Recommendation for Intensive Therapy (Based on cutoff provided or NNH/NNT calculated)
6	-	-	Assume composite SPRINT and SAE outcome	5	Not Specified	0.06	0.07	0.53	0.79				No specific recommendation is provided
28	MI, ACS, Stroke, HF, CVD death, Death, AKI	Same as above	-	22	3.3								Color coding to differentiate difference between treatments, 5 levels
16	SPRINT composite outcome	-	-	8	5	0.99	0.75			0.24			iNNT>100 - Low benefit group

Risk Calculation from Clinical Scores Developed												
ID	Efficacy Outcome	Safety Outcome	Efficacy and Safety Outcomes Combined	No. of Variables Used to Calculate the Risk	Time When Risk Calculated (in years)	Benefit Score	Harm Score	Benefit and Harm Combined Score	ARR of Efficacy Outcome (Standard - Intensive, %)	ARI of Safety Outcome (Intensive - Standard, %)	Net Benefit (Benefit-Harm) from Intensive Therapy (%)	Interpretation/Recommendation for Intensive Therapy (Based on cutoff provided or NNH/NNT calculated)
7	SPRINT composite outcome	Composite of Hypotension, Syncope, Bradycardia, ELYTE, fall, AKI	-	9	3.3			0	2	3.5	-1.5	Recommend Standard Therapy
27	SPRINT composite outcome	Composite of Hypotension, Syncope, ELYTE, fall, AKI	-		Not Specified	0	0		-0.5			Recommend Standard Therapy
23	SPRINT composite outcome	Composite of Hypotension, Syncope, Bradycardia, ELYTE, fall, AKI	-	9	3.3			quartile 1	0.82	0.97		Low benefit group. No specific recommendations.

Risk Category Classified from the Submission													
ID	Efficacy Outcome	Safety Outcome	No. of Variables Used to Calculate the Risk	Name the Variables Used to Categorize the Risk	Time When Risk Calculated (in years)	AR of Efficacy from Standard Therapy (%)	AR of Efficacy from Intensive Therapy (%)	AR of Safety from Standard Therapy (%)	AR of Safety from Intensive Therapy (%)	ARR of Efficacy (Standard - Intensive, %)	ARI of Safety (Intensive - Standard, %)	HR of Outcome (Intensive vs. Standard)	Interpretation/Recommendation for Intensive Therapy (HR of Intensive vs. Standard)
14	-	Hypotension, AKI	3	Framingham score, kidney disease, total cholesterol	Not Specified			Hypotension (3%), kidney disease (5%)	Hypotension (4%), kidney disease (7%)			HR benefit = 0.74; HR Safety = 1.28 for hypotension, 1.46 for Kidney Disease	Subgroup 1 (Low Harm, Benefit)
15	SPRINT composite outcome	-	3	clinical CVD, age, ascvd risk	Not Specified	2.8	1.9	1.2	2.2	0.9	1		Group A (Low CV risk but higher Benefit)
17	SPRINT composite outcome	-	3		Not Specified							HR of benefit = 0.83	Low risk

AR=absolute risk; ARR=absolute risk reduction; ARI=absolute risk increase; NNH=number needed to harm; NNT=number needed to treat;

SAE=serious adverse events; MI=myocardial infarction; ACS=acute coronary syndrome; HF=heart failure; CVD=cardiovascular diseases;

ELYTE=Electrolyte abnormality, fall=Injurious fall, OHYPO-SX=Orthostatic Hypotension with dizziness, OHYPO-ASX= Orthostatic hypotension

without dizziness, AKI=acute kidney injury; ASCVD=Atherosclerotic Cardiovascular Disease;