Appendix A: PREVAIL: Clinical Characteristics of WATCHMAN LAAC Device in Patients with Ischemic Strokes

Table 1: PREVAIL - Clinical Characteristics of WATCHMAN Device Patients with Ischemic Strokes

	Subject ID	Time to Event since Implant (days)	Age (yrs)	Sex	$CHADS_2$	CHA_2DS_2-VASc	Prior CVA/TIA (Distribution, if known)	Pro-thrombotic State (Clinical correlates)	CHF	HTN	DM	CAD (Known prior interventions)	PVD	Hyper-lipidemia	Smoking (past / present)	History of Cerebro-vascular Disease	Bioprosthetic Valve (Position)	Cardiac Implanted Electronic Device (CIED)
2013 Panel (January 2013 Dataset)	(b)(6)	453	77	F	5	7	Yes – CVA (right occipital)	No	Yes	Yes	No	No	No	Yes	Yes	Yes – Prior CEA	No	No
		773	--	--	--	--	Yes – CVA (right & left occipital)	--	--	--	--	--	--	--	--	--	--	--
		63	73	M	2	4	No	No	No	No	No	No	No	Yes	Yes	No	No	No
		129	82	M	5	7	Yes - TIA	No	No	Yes	Yes	Yes (CABG)	No	Yes	Yes	No	Yes (Aortic)	Yes - ICD
		4	69	F	3	3	Yes - CVA (residual left-sided weakness and ataxia)	No	No	Yes	No	No	No	Yes	No	No	No	No
		422	83	M	5	7	Yes - CVA	No	Yes	Yes	No	Yes (CABG, MI. Note: NSTEMI 04/02/12 (3 days prior to CVA) treated medically)	Yes	Yes	Yes	Yes - Prior CEA bilaterally	No	No
New Events Since 2013 Panel		779	86	M	2	2	No	No	Yes	No	No	No	No	No	Yes	No	No	Yes - ICD
		514	79	M	4	6	Yes - TIA	No	Yes	No	No	Yes (CABG)	No	Yes	No	No	Yes (Aortic)	No
		514	71	M	4	5	Yes - CVA	Yes - Factor V Leiden (prior DVT, IVC filter; prior LV thrombus)	Yes	Yes	No	Yes (PCI)	No	Yes	No	No	No	No
		526	67	M	4	6	Yes - CVA (occipital)	No	No	Yes	Yes	No	No	Yes	Yes	Yes - Bilateral carotid stenosis 49%	No	No
		466	63	M	3	4	No	No	Yes	Yes	Yes	Yes (PCI)	No	Yes	Yes	No	No	Yes - PPM
		605	84	M	2	4	No	Yes – Anti-cardiolipin and beta 2 glycoprotein antibodies (prior DVT)	No	No	No	Yes – Two prior MIs	No	Yes	Yes	No	No	Yes – PPM
		636	80	M	3	4	Yes - TIA	No	No	No	No	No	No	No	Yes	No	No	No
		787	77	F	1	3	No	No	No	No	No	No	No	No	Yes	No	No	No

*Subject (b)(6) experienced two ischemic strokes.

Key: CHF – Congestive Heart Failure; HTN – Hypertension; DM – Diabetes Mellitus; CAD – Coronary Artery Disease; PVD – Peripheral Vascular Disease; CVA – Cerebrovascular Accident; TIA – Transient Ischemic Attack, DVT – Deep Venous Thrombosis; IVC – Inferior Vena Cava; CABG – Coronary Artery Bypass Graft; MI – Myocardial Infarction; NSTEMI – Non-ST Elevation Myocardial Infarction; PCI – Percutaneous Coronary Intervention; CEA – Carotid Endarterectomy; PPM – Permanent Pacemaker; ICD – Implanted Cardioverter Defibrillator.

Table 2: PREVAIL - Clinical Manifestations of Ischemic Strokes in WATCHMAN Device Patients

	Subject ID	Age (yrs)	Sex	Clinical Context Signs & Symptoms	NIHSS			Barthel Index			Modified Rankin			Discharge Disposition	SAE Criteria*	OAC Status at Time of Stroke	Change in OAC Regimen after Stroke Diagnosis
					Baseline	After Event	Most Recent	Baseline	After Event	Most Recent	Baseline	After Event	Most Recent				
2013 Panel (January 2013 Dataset)	[redacted] (b)(6)	77	F	Headache, fluctuating expressive aphasia and confusion. Felt to be left occipital embolic infarct.	0	0	0	100	100	100	0	0	0	Home	Hospitalization	Off	Clopidogrel resumed, aspirin stopped.
	[redacted]	--	--	Decreased right hand coordination, right sided facial hypoesthesia, right upper extremity numbness and minor weakness, transient dysphasia.	0	1	0	100	100	100	0	0	0	Home	Hospitalization	Off	Warfarin started
	[redacted]	73	M	Dizziness, balance difficulty, diplopia.	0	5	0	100	100	100	0	1	0	Rehab	Hospitalization	Off	Warfarin resumed
	[redacted]	82	M	Acute onset shuffling gait and ataxia. Left-sided hemiparesis and left 7th cranial nerve facial paresis. No sensory / visual disturbances.	0	3	1	100	100	100	0	1	1	Home	Persistent disability	Off	Clopidogrel started
	[redacted]	69	F	Encephalopathy, (Occurred in context of embolization of WATCHMAN device early after procedure, with transient mitral valve occlusion and anoxic encephalopathy.)	0	Not done	Not done	100	Not done	Not done	1	Not done	Not done	Rehab	Hospitalization, Persistent Disability	Off††	No change
	[redacted]	83	M	Left hemiparesis and sensory deficit. Occurred in context of recent NSTEMI (3 days prior to event)	4	9	3	100	100	100	0	0	0	Rehab	Hospitalization, Life-Threatening Event	Off	Clopidogrel started
New Events Since 2013 Panel	[redacted]	86	M	Ataxia and dysphasia, fluctuating over 3 days.	0	5	5†	100	100	100	0	4	2	Home	Hospitalization	Off	Warfarin resumed
	[redacted]	79	M	Falls, right-sided paralysis, facial droop, dysphasia.	3	3	3	100	80	75	0	4	3	Rehab	Life-threatening Event, Hospitalization, Persistent Disability	Off	Unknown
	[redacted]	71	M	Expressive aphasia, right facial asymmetry.	6	6	6†	85	5	5†	3	5	5†	Rehab	Life-threatening Condition, Hospitalization, Persistent Disability	On	Warfarin continued
	[redacted]	67	M	Facial droop and slurred speech.	0	4	0	100	100	100	0	0	0	Home	Hospitalization, Persistent Disability	Off	Warfarin resumed
	[redacted]	63	M	Dysphasia and facial droop. Event occurred after abrupt cessation of apixaban approximately 1 week prior, without warfarin bridge, in preparation for PPM generator change.	0	1	0	100	100	100	0	1	0	Home	Hospitalization	Off	Rivaroxaban started
	[redacted]	84	M	Left-sided weakness and left facial droop, sensory intact (i.e. pure motor). Neurology note felt "Given that he had profound left hemiplegia without any other neurological symptoms, it seems most likely that deep white matter disease was the etiology and that it is somewhat less likely that he had an embolus into the MCA stem." Further: "lesion likely subcortical internal capsule."	0	0	0	100	100	50‡	1	1	4‡	Rehab	Hospitalization	Off	No change
	[redacted]	80	M	Aphasia.	0	0	0	100	100	100	0	1	0	Home	Hospitalization	Off	Dabigatran started
	[redacted]	77	F	Dysphasia, mild right facial droop, and right-sided mild sensory loss upper and lower extremities. Felt to be lacunar syndrome by consulting neurologist.	0	4	4	100	100	100	0	1	1†	Home	Hospitalization	Off	Aspirin dose increased

* Serious adverse event criteria as adjudicated by Clinical Events Committee: "Hospitalization": Requires inpatient hospitalization or prolongation of existing hospitalization; "Persistent Disability": Results in persistent or significant disability/incapacity.
†Signifies last score available is that which was taken directly after event. †† Not yet on warfarin at time of event – occurred in context of embolization of WATCHMAN device early after procedure, with transient mitral valve occlusion and anoxic encephalopathy. ‡Due to metastatic cancer

Table 3: PREVAIL – Results of Imaging Studies Performed in WATCHMAN Device Patients with Ischemic Strokes

	Subject ID	MRI Scan	CT Scan	Angiography (CTA/MRA)	TEE	Vascular Studies
2013 Panel (January 2013 Dataset)	[redacted] (b)(6)	Minimal L occipital infarct. Small vessel ischemic change.	No acute infarct in 2 CTs. Moderately severe small vessel ischemic disease. Old right PCA infarct.	No large vessel occlusive disease identified from aortic arch to second level intra-cranial arteries.	No leak. No thrombus.	Not done.
		Acute-subacute ischemic change in posterior left frontal lobe, subcortical and deep white matter with restricted diffusion. Chronic white matter changes. Old right occipital lobe infarction as noted previously.	Moderate chronic ischemic changes in periventricular white matter. Chronic right occipital lobe infarct. No acute intracranial process.	Neck MRA: Normal arch anatomy. No evidence of great vessel origin stenosis. No aneurysm / pseudoaneurysm of major neck vessels. No carotid stenosis. Brain MRA: Codominant vertebral arteries. Mild atherosclerotic narrowing LMCA vascular trifurcation. No high grade stenosis.	No leak. No thrombus. Moderate spontaneous echo-contrast in left atrium.	Echo notes moderate atherosclerotic plaquing of aorta.
		Small (6mm) right lateral medullary infarct (consistent with Wallenberg syndrome).	N/A	Right vertebral artery occluded from origin to basilar artery. Anterior circulation appears normal	Small leak 2.5-5mm; no thrombus.	Not done.
		Not done due to ICD.	Negative.	Not done.	Not done.	Not done.
		Multiple areas of FLAIR signal hyperintensity in periventricular and subcortical white matter, likely representing small vessel ischemic change. Old lacunar infarct right basal ganglia.	Old infarct right external capsule and basal ganglia. CT (subsequent) showed R falcine/tentorium SDH.	MRA: no hemodynamically significant stenosis in neck or intra-cranial vasculature.	Not done.	Not done.
		New acute infarct right parietal parasagittal distribution 1.8x3.0cm. Large old left posterior parietal infarct.	Old infarcts of left parietal, left frontal and right parietal lobes, without evidence of acute intra-cranial anomaly	N/A	No thrombus, 'minimal' residual flow around device. EF 35%. Post septal puncture ASD.	Duplex Doppler: no significant stenosis in bilateral common/internal carotids; >50% stenosis left external carotid; Mod-severe stenosis right subclavian
New Events Since 2013 Panel		Not done due to ICD.	Old microvascular disease.	No significant stenoses seen along course of carotid or vertebral arteries within the neck, no intracranial stenoses.	No thrombus.	Modest atherosclerotic change of carotid arterial systems bilaterally without evidence of hemodynamically significant disease.
		N/A	Moderate bilateral small vessel ischemic change. Calcified carotid siphons and vertebral arteries.	N/A	Not done. TTE: Technically limited. Bioprosthetic Aortic Valve.	No evidence of hemodynamically significant carotid disease. Aortic atherosclerotic changes in abdominal and pelvic aorta.
		Acute/subacute infarcts in left posterior frontal lobe MCA distribution with focal prominence of ACA and left MCA flow voids	N/A	Limited study.	Thrombus on device (hypermobile echodensity)	No evidence of hemodynamically significant carotid disease.
		Small acute R frontal lobe and R parietal lobe infarct. Old R occipital lobe infarct.	N/A	N/A	Mild spontaneous echo contrast but no thrombus.	Minimal (1-15%) left and right carotid bulb stenosis and minimal plaque. External carotids, vertebral and subclavian arteries all normal. Transcranial Doppler: no evidence of active embolization to right circulation.
		Not done due to PPM.	See CTA	Wedge-shaped area of hypo-attenuation posterior left frontal lobe cortex. Moderate mixed atherosclerotic plaque bilateral common carotids and V4 segments of vertebral arteries bilaterally.	Not done. TTE is WNL.	Moderate mixed atherosclerotic plaque bilateral common carotids and V4 segments of vertebral arteries bilaterally.
		Not done due to PPM.	No gross cortical infarct.	Diffuse congenital narrowing of left common and left internal carotid arteries relative to the right.	Not done.	Not done.
		DWI positive, acute left MCA stroke	Old right temporoparietal infarct.	Probable branch occlusion of anterior division of left MCA.	Not done. TTE is WNL.	Not done.
		Acute left thalamic infarct. Old right parietal and occipital infarct in superior right frontal lobe	No finding of acute abnormality.	Occluded intracranial right vertebral artery. Neck: severely stenosed right vertebral artery. Flow in distal intracranial segment is retrograde from basilar.	Not done. TTE shows no acute abnormality.	Not done.

Key

ACA – anterior cerebral artery; MCA – middle cerebral artery; PCA – posterior cerebral artery; DWI – diffusion weighted imaging; SDH – subdural hematoma; TEE – Transesophageal Echocardiogram; TTE – Transthoracic Echocardiogram; WNL – within normal limits.