

**WATCHMAN® Left Atrial Appendage System
Continued Access PROTECT AF Registry
Preliminary Clinical Report**

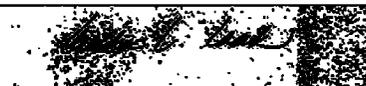
Title of Investigation: Continued Access PROTECT AF Registry (CAP Registry)

Device Name and Models: WATCHMAN® LAA Closure Technology
consisting of the following components:
WATCHMAN LAA Closure Device (Implant)
WATCHMAN Delivery System
WATCHMAN Access System
WATCHMAN Obturator

Name of Sponsor: Atritech, Inc.

Protocol Number:

Report Author(s) and Approvers:

Linn Laak Vice President, Regulatory & Clinical	
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appear as white spaces on the screen or on the printed page.***

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1 Introduction

This report details the clinical data collected for the study entitled “Continued Access PROTECT AF Registry (CAP Registry) under Atritech Clinical Protocol [REDACTED]”. The study was conducted under IDE # [REDACTED] at up to 30 approved investigational centers in both the United States and Europe with enrollment initiated August 2008.

The purpose of the registry is to allow continued access to the WATCHMAN device to a subset of the pivotal study investigators and to gain further information on the device after the conclusion of enrollment in the pivotal study and prior to PMA approval. The CAP registry is a non-randomized study with patient population and procedures that are similar to the PROTECT AF pivotal study data. CAP will include up to 30 of the PROTECT AF investigational centers and up to 750 subjects.

This report includes preliminary data reported through March 3, 2009.

1.1 Study Objective

The objective of the CAP Registry is to continue data collection to demonstrate the WATCHMAN implant to be safe and effective in its intended patient population. Descriptive analyses will be performed for the primary efficacy, safety, and technical endpoints, which include the following:

- Successful treatment of the patient without stroke, cardiovascular death and systemic embolization
- Treatment of the patient without the occurrence of life-threatening events such as device embolization requiring retrieval, bleeding events such as pericardial effusion requiring drainage, cranial bleeding events due to any source, gastrointestinal bleeds requiring transfusion and any bleeding related to the device or procedure that necessitates an operation
- Device success, defined as successful delivery and release of the WATCHMAN implant into the LAA, including successful re-capture and retrieval if necessary.

1.2 Study Scope and Duration

The CAP Registry is conducted under Investigational Device Exemption (IDE) # [REDACTED]. Up to 30 centers and 750 patients will participate. Enrollment commenced in August 2008, and is expected to be completed within 2 years. Each patient is expected to be followed for up to 5 years post implant.

2 Selection of Study Population

2.1 Inclusion Criteria

A patient is enrolled in the study if all of the following inclusion criteria are met:

- The patient is 18 years of age or older
- The patient has documented paroxysmal, persistent, or permanent non-valvular atrial fibrillation (i.e., the patient has not been diagnosed with rheumatic mitral valvular heart disease)
- The patient is eligible for long-term warfarin therapy
- The patient is eligible to come off warfarin therapy if the LAA is sealed (i.e., the patient has no other conditions that would require long-term warfarin therapy suggested by current standard medical practice)
- The patient has a calculated CHADS₂ score of 1 or greater
- The patient or legal representative is able to understand and willing to provide written informed consent to participate in the trial
- The patient is able and willing to return for required follow-up visits and examinations

2.2 Clinical Exclusion Criteria

A patient is excluded from the study if any of the following clinical exclusion criteria were met:

- The patient suffers from New York Heart Association Class IV Congestive Heart Failure
- The patient has had a recent MI (within 3 months)
- The patient has an ASD and/or atrial septal repair or closure device
- The patient had a single occurrence of AF
- The patient has an ablation procedure planned within 30 days of potential WATCHMAN Device implant
- The patient has a planned cardioversion 30 days post implant of the WATCHMAN Device
- The patient has a resting heart rate > 110 bpm
- The patient had a transient case of AF (i.e., secondary to recent CABG (within 3 months), etc.)
- The patient has an implanted mechanical valve prosthesis
- The patient's left atrial appendage is obliterated
- The patient has undergone heart transplantation
- The patient has symptomatic carotid disease (i.e., carotid stenosis \geq 50% associated with ipsilateral transient or visual TIA evidenced by amaurosis fugax, ipsilateral hemispheric TIAs or ipsilateral stroke within 6 months)
- The patient had a prior embolic stroke or TIA within the last 30 days
- The patient requires long-term warfarin therapy (refer to protocol for additional details)
- The patient is contraindicated for warfarin therapy (refer to approved labeling for additional

details)

- The patient has thrombocytopenia ($< 100,000$ platelets/mm³) or anemia with hemoglobin concentration of < 10 g/dl
- The patient is contraindicated for aspirin
- The patient is actively enrolled in another IDE or IND investigation of a cardiovascular device or an investigational drug (post-market study participation is acceptable)
- The patient is pregnant or pregnancy is planned during the course of the investigation if patient is of child bearing potential
- The patient has an active infection of any kind
- The patient has a life expectancy of less than two years

2.3 Echocardiographic Exclusion Criteria

A patient is excluded from the study if any of the following echocardiographic exclusion criteria (as assessed via TTE and TEE) are met:

- The patient has LVEF $< 30\%$
- The patient has intracardiac thrombus or dense spontaneous echo contrast as visualized by TEE within 2 days prior to implant
- The patient has a high risk patent foramen ovale (PFO) (refer to protocol for additional details):
- The patient has significant mitral valve stenosis (i.e., MV < 1.5 cm²)
- The patient has an existing pericardial effusion of ≥ 3 mm
- The patient has complex atheroma with mobile plaque of the descending aorta and/or aortic arch
- The patient has a cardiac tumor

3 Results

3.1 Demographics

3.1.1 Enrollment/Subject Disposition

Table 3-1 summarizes patient enrollment and follow-up status of patients completing visits.

Table 3-1. Subject Disposition

Table 3-1. Subject Disposition				
88	84	53	1	1

Table 3-2 provides a listing of the 16 centers that attempted implant in at least one patient in the CAP Registry.

Table 3-2. CAP Enrollment Summary

Table 3-2. CAP Enrollment Summary				
1		1	1	0
2		7	7	0
3		5	5	0
4		8	7	1
5		7	7	0
6		6	5	0
7		4	4	0
8		6	6	0
9		16	16	0
10		4	4	0
11		3	3	0
12		1	1	0
13		1	0	0
14		12	12	0
15		4	4	0
16		3	2	0

3.1.2 Population/Subject Demographics

Table 3-3 summarizes the patient baseline demographic information. This data was available on 76 of the enrolled patients at the time of this report.

Table 3-3. Baseline Demographics

Age (years)		73.0±9.6 (44, 90)
Height (inches)		70.8±17.0 (46, 180)
Weight (lbs)		187.8±45.5 (104, 333)
Gender		
	Female	24 (31.6)
	Male	52 (68.4)
Race/Ethnicity		
	Asian	0 (0.0)
	Black/African American	0 (0.0)
	Caucasian	69 (92.0)
	Hispanic/Latino	5 (6.7)
	Hawaiian/Pacific Islander	0 (0.0)
	Other	1 (1.3)

Values presented are N (%) or mean±standard deviation (min, max) as appropriate

Baseline risk factors for enrolled patients are summarized in Table 3-4.

Table 3-4. Baseline Risk Factors

CHADS ₂ score		
	1	22 (28.9)
	2	24 (31.6)
	3	11 (14.5)
	4	13 (17.1)
	5	6 (7.9)
	6	0 (0.0)
CHF		17 (22.4)
History of hypertension		61 (80.3)
Age ≥ 75		37 (48.7)
Diabetes		20 (26.3)
Previous TIA/Ischemic Stroke		25 (32.9)
AF Pattern		
	Paroxysmal	29 (38.2)
	Persistent	17 (22.4)
	Permanent	27 (35.5)
	Unknown	3 (3.9)
LVEF %		57.5±10.6 (35, 82)

Values presented are N (%) or mean±standard deviation (min, max) as appropriate

3.2 Procedural Data

3.2.1 *Implant Procedure Success*

Implant Procedure Success is defined as the successful delivery and release of a WATCHMAN Device into the LAA. Implant procedure success rates are presented in Table 3-5.

Table 3-5. Implant Procedure Success

[REDACTED]
84/88 (95.5)

3.3 Preliminary Results

3.3.1 *Description of Analysis Cohort*

The cohort to be analyzed includes all enrolled patients who underwent an implant attempt (i.e., venous access with the intent of implanting the WATCHMAN device).

3.3.2 *Primary Efficacy Endpoint*

Of the data collected to date, no efficacy endpoint events have been reported.

3.3.3 *Primary Safety Endpoint*

The primary safety endpoint is the treatment of the patient without the occurrence of life-threatening events as determined by the CEC, which would include events such as device embolization requiring retrieval, bleeding events such as pericardial effusion requiring drainage, cranial bleeding events due to any source, gastrointestinal bleeds requiring transfusion and any bleeding related to the device or procedure that necessitates an operation.

A listing of the safety endpoint related adverse events is displayed in Table 3-6.

Table 3-6. Safety Endpoint Related Adverse Events

[REDACTED]			
[REDACTED]	19NOV2008	23JAN2009	Gastrointestinal Bleeding

3.3.4 *Exploratory Safety Analysis: Pericardial Effusions*

Pericardial effusion events reported in the CAP Registry were adjudicated by the Clinical Events Committee (CEC) as either:

- “Serious” as defined as any effusion requiring either pericardiocentesis or surgery.
- “Not Serious” as defined as any effusion that did not cause hemodynamic change and required no treatment.

In addition, each effusion was adjudicated based upon its relation to the procedure or device.

In Table 3-7, the following three categories of events were analyzed:

- “Any,” which includes both serious and not serious effusions.
- “Any procedure/device-related,” which includes only effusions caused by the procedure or device. This category includes both serious and non-serious effusions.
- “Any serious,” which includes only effusions requiring pericardiocentesis or surgery.

Table 3-7. Pericardial Effusions by Site Experience

CAP Patients	1/88 (1.1)	1/88 (1.1)	1/88 (1.1)
Pivotal PROTECT AF Patients	53/542 (9.8)	38/542 (7.0)	28/542 (5.2)

3.3.5 Adverse Events

There have been no deaths reported in the CAP Registry to date.

Serious adverse events as adjudicated by the CEC are summarized in Table 3-8.

Table 3-8. Listing of Serious Adverse Events

	18DEC2008	19DEC2008	Pericardial Effusion
	19NOV2008	23JAN2009	Gastrointestinal Bleeding
	21JAN2009	21JAN2009	Device Thrombus

Device or Procedure Related Events are summarized in Table 3-9. For this table, classification into event types is based on CEC adjudication.

Table 3-9. Listing of Device or Procedure Related Events

	18DEC2008	19DEC2008	Pericardial Effusion
	19SEP2008	19SEP2008	Other Study Related: Hypotension
	02DEC2008	07DEC2008	Infection
	21JAN2009	21JAN2009	Device Thrombus

Table 3-10 lists adverse events. Events are classified by the CEC determined type.

Table 3-10. Summary of Adverse Events

	18DEC2008	19DEC2008	Pericardial effusion
	19SEP2008	19SEP2008	Other Study Related
	02DEC2008	07DEC2008	Infection
	19NOV2008	23JAN2009	Gastrointestinal Bleeding
	21JAN2009	21JAN2009	Device Thrombus