

WATCHMAN DEVICE IMPLANTATION FOR LEFT ATRIAL APPENDAGES OCCLUSION: A THREE-YEAR UPDATED TRENDS IN THE UNITED STATES

Prima Wulandari,1

¹Massachusetts General Hospital/Harvard Medical School

Background:

The Watchman device has emerged as a novel approach for left atrial appendage occlusion. The device has come to light as a feasible strategy for mitigation of stroke risk in patients with atrial fibrillation (AFib).

Purpose:

We aim to investigate developments in Watchman device implantation and its related inpatient adverse events following the device approval by the Food and Drug Administration (FDA) in 2015.

<u>Methods</u>:

We analysed the data from National Inpatient Sample (NIS) from January 2015 to December 2017 by retrospective cohort study design. Watchman device implantation procedure were identified using International Classification of Diseases (ICD) codes of 02L73DK (ICD10-CM) and 37.90 (ICD9-CM). We evaluated outcomes that were concomitant with complications and inpatient mortality. We performed analysis of variance to inspect trend analysis.

<u>Results</u>:

We analysed 17,700 men and women patients aged 40-79 years who underwent Watchman device implantation. We observed substantial rise in trend in the amount of Watchman implantation procedures executed throughout the years (from 1,184 procedures in 2015 to 11,154 procedures in 2017, p<0.01). Additionally, we noted a significant decrease in complications rate, from 25.3% of cases in 2015 to 6.8% of cases in 2017 (p<0.01) and a concomitant decline in inpatient mortality, from 1.2% of cases in 2015 to 0.05% of cases in 2017(p<0.01).



Conclusion:

Since the approval of Watchman device by the Food and Drug Administration (FDA) in 2015, its implantation procedure emerges to be progressively more frequent and safer as a feasible strategy for mitigation of stroke risk in patients with atrial fibrillation.

Variable no. (%)	2015 (n=1,184)	2016 (n=5,329)	2017 (n=11,154)	Combined	P-value
				(n=17,667)	
Composite complications (%)	300 (25.3)	378 (7.1)	758 (6.8)	1,431 (8.1)	<0.01
Hemopericardium or Pericardial effusion	64 (5.4)	155 (2.9)	312 (2.8)	530 (3.0)	<0.01
Cardiac Tamponade	<10 (<1.0) *	27 (0.5)	100 (0.9)	124 (0.7)	0.02
Pericarditis	<10 (<1.0) *	<10 (<0.2) *	33 (0.3)	35 (0.2)	<0.01
Need for Pericardiocentesis	19 (1.6)	32 (0.6)	132 (1.2)	194 (1.1)	<0.01
Pseudoaneurysm	4 (0.3)	16 (0.3)	22 (0.2)	35 (0.2)	0.62
Retroperitoneal Bleeding	0	16 (0.3)	11 (0.1)	35 (0.2)	0.02
Hemorrhagic stroke	<10 (<1.0) *	11 (0.2)	33 (0.3)	53 (0.3)	0.17
Ischemic stroke/TIA	76 (6.4)	32 (0.6)	33 (0.3)	159 (0.9)	<0.01
Gastrointestinal bleeding	19 (1.6)	139 (2.6)	290 (2.6)	442 (2.5)	0.1
Need for blood transfusion	128 (10.8)	64 (1.2)	187 (1.7)	389 (2.2)	<0.01
Device thrombus	0	0	0	0	
Device Embolization	0	0	<10 (<0.1) *	<10 (<0.1) *	<0.01
*Less than 10 data were not reported as per National Inpatient Sample database recommendations					

TIA=transient ischemic attack