Section: Medicine

Research

CLINICAL OUTCOME OF WELLENS' SIGN IN PATIENT WITH ACUTE CORONARY SYNDROME PRESENTED IN BKL WALAWALKAR MEDICAL COLLEGE, DERVAN

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Abstract

Background: Acute coronary syndrome is commonest medical emergency across globe. Currently even in Rural set up Electrocardiogram is readily available and it plays a fundamental role in diagnosis and risk-stratification in patient of ACS. Wellens' sign- symmetrically inverted or biphasic T wave in anterior precordial leads is easily identifiable on ECG and it implication in left anterior descending artery as a culprit vessel is well document 3 decades ago. This study integrates our experience of Outcome in such patient after medical management or interventional treatment. **Materials and Methods:** We performed a retrospective analysis of ACS patient showing ECG s/o Wellens syndrome between august 2021 to August 2022. This patient underwent Coronary angiography, later CAG was reviewed and further intervention was studied and 1 year outcome of such patient was studied. **Result:** 62 Patient presenting with ACS belonged to age group from 33-78 years. The most common symptom was chest pain followed by dyspnoea and sweating. Among this patient, 52 of patient has LAD as culprit vessel. After intervention 1 year outcome on follow up 43 patients has symptom free period while death was reported in 4 individuals. **Conclusion:** This study showed importance of timely intervention and early treatment in patient with Wellens' sign in ECG has an excellent symptom free outcome and decrease in complication post myocardial infraction.

INTRODUCTION

In the past decade, the burden of ischemic cardiovascular disease has risen to the leading cause of morbidity and mortality worldwide,[1] notably due to coronary artery disease (CAD).[2] The degree of coronary stenosis is considered the underlying cause of ischemia. The most common vessel involved in CAD is the left anterior descending artery (LAD), which is also the most common infarct-related artery in acute myocardial infarction (MI).[3] Nevertheless, the presence of either symmetrically inverted or biphasic T waves in anterior precordial leads, so-called Wellens' sign, has been reported to predict LAD culprit lesion in patients with unstable angina in the studies published almost 3 decades ago when sensitive biomarker cardiac troponin was not available.[4] Considering limitation in a rural setup early assessment, timely diagnosis followed by prompt intervention could help in achieving better results. In this context we aim to determine the clinical outcome after percutaneous intervention in patients with Wellens sign.[5,6]

MATERIALS AND METHODS

We performed a retrospective analysis of 62 ACS patient between august 2021 to August 2022 at BKL Walawalkar rural medical college, Dervan, Maharashtra a Tertiary care Centre.

Inclusion Criteria

- ECG S/O symmetrically inverted or biphasic T wave in anterior precordial leads
- Cardiac symptoms like chest pain, sweating, dyspnoea, syncope

Exclusion Criteria

1. ECG s/o Left ventricular hypertrophy and those with pathological q wave in V2 and V3 leads.

2. Previous history of coronary artery disease or patient has underwent coronary artery bypass grafting (CABG)

62 patient were evaluated at emergency department, medically treated underwent echocardiography and CAG, later CAG were reviewed followed by further intervention was studied and 1 year outcome of such patient was studied.

RESULTS

The study included 62 patient with age ranging from 33 to 78 year. 28(45%) were female while 34 (55%) were male.

The most common clinical feature was chest pain (70%) followed by dyspnoea (56%). [Table 1]

Table 1: Demographic and clinical Characteristics of patient with wellens sign.

Sr No	Clinical Characteristics	Number	Percentage
1	Total no of patient	62	
2	Age range (in years)	33 to 78 Mean 61.45	
	Females	28	45
	Males	34	55
3	Comorbidities		
	Hypertension	20	
	Diabetes mellitus	16	
	Dyslipidaemia	2	
4	Symptoms		
	Chest pain	44	70
	Dyspnoea	35	56
	Sweating	33	53
	Others	6	10
5	Mode of transport		
	Ambulance	36	58
	Local transport/ private vehicle	23	37
	Two wheelers	3	5
6	ACS		
	STEMI THROMBOLOYSED	15 8	24
	NSTEMI	34	55
	UNSTABLE ANGINA	13	21

Table 2: Showing Finding of Echocardiography and coronary angiography.

1	Echocardiography (ejection fraction)	Number	Percentage
	15-30%	10	
	30-45%	14	
	45-60%	16	
	>60%	22	
2	**Coronary Angiography**		
	Normal	4	6.20
	Minor CAD	6	10
	SVD -LAD	16	25.80
	DVD- Double vessel disease	24	40
	TVD- Triple vessel disease	12	20

Table 3: 1-year Clinical outcome

In hospital mortality	2	3.22
Alive and asymptomatic	43	69.35
Alive but symptomatic	15	24.19
Death	2	3.22

58% of patient were transported to tertiary care centre in Ambulance while remaining 42% were taken to centre by private vehicle or local transport. [Table 1]

A total of 10 patient has Ejection fraction less than 30% [Table 2]

85.80% of patient showed LAD as critical lesion on Coronary angiography. [Table 2]

69.35% of patient had symptom free period for 1 year After percutaneous Trans luminal coronary angioplasty. [Table 3]

DISCUSSION

Wellens sign on ECG is an unusual presentation of ACS has been initially described in the early 1980s by de Zwaan et al,[7] although the exact mechanism of wellens signs has not been fully understood, a probable explanation is a brief transient episode of myocardial ischemia.[7] Kobayshi et al conducted a retrospective analysis of prevalence and clinical implication of wellens sign in 481 patient with NSTEMI. Their study revealed Two-third of patient with Wellens sign had LAD culprit lesion.[5] In our study More than 80% of patient with Wellens sign had LAD culprit lesion. O keeffe C et al carried a study on Role of ambulance response times in the survival of patients with out-of-hospital cardiac arrest. Overall, 30 (2.6%) of the 1161 patients with cardiac arrest survived to hospital discharge. In our study 4 % mortality was observed in patient who

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were transported by means of ambulance. Present study revealed that critical stenosis in left anterior descending artery, timely intervened has 69.35% of symptom free period for 1 year.

Limitation of the Study

This study has several limitations, including a retrospective design, a relatively small number of patients and the lack of data on long term clinical outcomes.

CONCLUSION

This study showed importance of timely intervention and early treatment in patient with Wellens' sign in ECG has an excellent symptom free outcome and decrease in complication post myocardial infraction.

REFERENCES

1. Mozaffarian D, Benjamin EJ, Go AS, Arnett DK, Blaha MJ, Cushman M, et al. Heart Disease and Stroke Statistics-2016 Update: A Report From the American Heart Association. Circulation. 2016;133(4):e38-360. doi: 10.1161/CIR.0000000000000350.
2. Herrington W, Lacey B, Sherliker P, Armitage J, Lewington S. Epidemiology of Atherosclerosis and the Potential to Reduce the Global Burden of Atherothrombotic Disease. Circ Res. 2016;118(4):535-46. doi: 10.1161/CIRCRESAHA.115.307611.
3. Sgarbossa EB, Birnbaum Y, Parrillo JE. Electrocardiographic diagnosis of acute myocardial infarction: Current concepts for the clinician. Am Heart J. 2001;141(4):507-17. doi: 10.1067/mhj.2001.113571.
4. Hamm CW, Ravkilde J, Gerhardt W, Jørgensen P, Peheim E, Ljungdahl L, et al. The prognostic value of serum troponin T in unstable angina. N Engl J Med. 1992;327(3):146-50. doi: 10.1056/NEJM199207163270302.
5. Kobayashi A, Misumida N, Aoi S, Kanei Y. Prevalence and Clinical Implication of Wellens' Sign in Patients With Non-ST-Segment Elevation Myocardial Infarction. Cardiol Res. 2019;10(3):135-141. doi: 10.14740/cr856.
6. O'Keeffe C, Nicholl J, Turner J, Goodacre S. Role of ambulance response times in the survival of patients with out-of-hospital cardiac arrest. Emerg Med J. 2011;28(8):703-6. doi: 10.1136/emj.2009.086363.
7. de Zwaan C, Bär FW, Wellens HJ. Characteristic electrocardiographic pattern indicating a critical stenosis high in left anterior descending coronary artery in patients admitted because of impending myocardial infarction. Am Heart J. 1982;103(4 Pt 2):730-6. doi: 10.1016/0002-8703(82)90480-x.

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