

Prevalence of Discharge against Medical Advice (DAMA) Among Acute Myocardial Infarction (AMI) at King Fahad Medical City (KFMC) in Saudi Arabia

Zainab M. Jafary¹, Sawsan M. Al-Somali², Nahid K. El. Bakri³

¹Department of King Salman Heart Center

²Department of King Salman Heart Center

³Department of Research Center
Fahad Medical City, Riyadh, Saudi Arabia

Abstract: Leaving hospital against medical advice may have adverse consequences. Previous studies have been limited by evaluating specific types of myocardial infarction patients, small sample sizes and incomplete determination of outcomes. Discharge against medical advice (DAMA) has been associated with increased morbidity and re-admission of the patients who have been DAMA. The present study aims to determine the prevalence of DAMA among AMI patients and to find out the associated factors for DAMA. A retrospective study was conducted from January 2013 to December 2014 in KSHC at KFMC hospital in Riyadh, KSA. Data collection was performed using a two-part checklist including demographic factors, information about hospital and DAMA reasons. The profile of all DAMA patients was studied. There were 507 patients with AMI, 37 patients (7.3%) who's left against medical advice. Compared with those who didn't leave against medical advice, age more often in (41-60), more often make. The readmission period more often be more one month, they had 11.1% died after (DAMA), The most often reason of DAMA among myocardial infarction patients (83.8%).

Keywords: Discharge Against Medical Advice; Acute myocardial Infarction; Risk factor, Prevalence.

1. INTRODUCTION

Discharge Against Medical Advice (DAMA) is not uncommon problem, and it may lead to complications and increased mortality and morbidity.[1]Unfortunately, DAMA patients face the problem of readmission and even reaching high level of disease severity because of incomplete treatment.[3] Several studies reported various prevalence rates with the highest prevalence that was reported by psychiatric hospital in Iran .[2]Cardiovascular Disease (CVD) carries major risk globally and it is among the leading cause of morbidity and mortality.[5]It had been demonstrated earlier a very high-prevalence of dyslipidemia in Saudi patients with CAD.[6]Myocardial infarction is a major complication of CAD.AMI can lead to a wide range of complications including inflammatory, mechanical, ischemic, or embolic complications.[7]Similar study in Iran showed(DAMA) is a relatively common problem and most frequent reasons for DAMA among cardiac patients was lack of consent to surgery or invasive procedures due of fear.[12] Therefore, in this study, we assessed the prevalence of DAMA among patients admitted with a primary diagnosis of Acute Myocardial Infarction (AMI). Furthermore, we looked into DAMA association with the outcome in terms of death or hospital readmission in AMI patients.

2. SUBJECTS AND METHODS

This study reviewing data of inpatients diagnosed with acute myocardial infarction from King Salman Heart Center, at King Fahad MC).

The study population comprised adult in patients who were discharged after acute myocardial infarction from King Salman Heart Center, after approval and clearance by Ethical Review from institutional review board IRB Log No (15-233). All ethical requirements such as written informed consent and assurance of confidentiality of responses were strictly adhered to throughout the study. We conducted a retrospective study using hospital discharge data of all patients discharged from KSHC during the period of 2013-2014. We collected demographic data including age (20-40,41-60,>60), and gender(Female, Male). Moreover, risk factors (hypertension, diabetes mellitus, smoker, dyslipidemia, family history)were collected in terms of co morbidities including diabetes, hypertension dyslipidemia, smoking. Family history of chronic diseases was collected. The outcome was defined as death, readmission and increased disease severity. Period before readmission was reported as more or less than one month. Information regarding the decision of discharge whether with or against medical advice was also recorded. The second part, included tools to know reasons that lead myocardial infarction patients to DAMA. Reasons for DAMA were addressed in three main areas: personal and family reasons, reasons associated with hospital personnel, reasons associated with treatment and associated welfare sectors. The patients 'causes were recorded as a subset of these three areas in the check list. The primary outcome was subsequent hospital admission for acute myocardial infarction or all-cause of readmission and death during DAMA defined as a discharge diagnosis of AMI. Our primary outcomes were defined as readmission to hospital within 30 days or more after discharge. Death was based on KSHC mortality data. Data was analyzed by SPSS 16 software. For descriptive data, descriptive statistics (percentage, frequency, mean, standard deviation and cross-tabulations) and for analytical data, inferential statistics (Pearson correlation coefficient) were used. To assess the association DAMA with risk factors, we used multivariable regression models to adjust for potential confounding variables.

3. RESULTS

(80.1%), and most of the patients were in 41-60 years age group (49.3%). The prevalence of DAMA was 7.3%.Prevalence of DAMA was maximum (9.4%) in > 60 years age group followed by (6.0%) in group 41-60 years and (5.5%) in group 20-40 years [Table 1]. Although it was not significant($p=0.064$)DAMA among males was (8.4%) whereas its prevalence in females was (3.3%).

Multiple risk factors were present in (49.7%)of the patients while single risk factor was observed in (24.5%) and (25.8%) has no any risk factor. DAMA across single risk factor was (10.5%) whereas prevalence in multiple risk factors was (7.9%), and(3.1%) in patients with no risk factors. The difference was not significant.

Readmission was observed among (21.5%) of which (13.8%)had DAMA while (5.5%)of no readmission had DAM and difference was significant ($p>0.003$).

Readmission duration results showed that (64.4%) had more than one-month and (11.9%) was reported in DAMA.DAMA was observed in duration of less than one month readmission period (16.2%), and no significant difference was noted compared to no DAMA.

Outcome considering death and survival results showed death (8.9%) of which 11.1% were DAMA patients while only (6.9%) of the survivals were formed DAMA. Moreover; none of the studied factors predicted significant association with DAMA in backward step binary regression multivariate model [Table.2].

But patients bearing single risk factor were 3.7 times more likely to have DAMA compared to those bearing no any risk showings significant difference($p<0.05$). However; DAMA in multiple risk factor group was 2.7 times more than no any risk but that was not statistically significant. DAMA in readmitted of patients was 2.7 times more in DAMAthan Non-DAMA patients and the difference was significant ($p<0.05$)[Table.3].

Table 1: Characteristics of the patient with DAMA at KSHC (Between group comparison) DAMA at KSHC (Between group comparison)

		Non-DAMA	DAMA	Total	p value
		n (%)	n (%)	n (%)	
Age (yr)	20 - 40	52 (94.5)	3 (5.5)	55 (10.8)	0.329
	41 - 60	235 (94.0)	15 (6.0)	250 (49.3)	
	> 60	183 (90.6)	19 (9.4)	202 (39.8)	
Gender	Female	98 (97.0)	3 (3.0)	101 (19.9)	0.062
	Male	372 (91.6)	34 (8.4)	406 (80.1)	
Risk Factors	No any	127 (96.9)	4 (3.1)	131 (25.8)	0.064
	Single	111 (89.5)	13 (10.5)	124 (24.5)	
	Multiple	232 (92.1)	20 (7.9)	252 (49.7)	
Readmitted	No	376 (94.5)	22 (5.5)	398 (78.5)	0.003
	Yes	94 (86.2)	15 (13.8)	109 (21.5)	
Readmission Period	≤ 1 month	31 (83.8)	6 (16.2)	37 (35.6)	0.541
	> 1 month	59 (88.1)	8 (11.9)	67 (64.4)	
Final Outcome	Survived	430 (93.1)	32 (6.9)	462 (91.1)	0.303
	Died	40 (88.9)	5 (11.1)	45 (8.9)	
DAMA Reason	Conflict with hospital policy/Procedures			4 (10.8)	
	Multiple reasons			2 (5.4)	
	Personal/Other Reason			31 (83.8)	

Table 2: Variables in the Equation-Variables in the Equation

		B	S.E.	Wald	Sig.	Exp(B)	95% C.I.for EXP(B)	
							Lower	Upper
Step 1 ^a	t_Age	.172	.520	.110	.741	1.188	.429	3.288
	Sex	.551	.839	.431	.511	1.735	.335	8.989
	RF	-.085	.362	.055	.814	.918	.452	1.867
	Readmn.prd	-.522	.611	.731	.393	.593	.179	1.964
	Outcome	1.176	.783	2.256	.133	3.242	.699	15.044
	Constant	-1.950	1.786	1.192	.275	.142		
Step 2 ^a	t_Age	.152	.513	.087	.768	1.164	.425	3.183
	Sex	.575	.833	.476	.490	1.777	.347	9.102
	Readmn.prd	-.525	.611	.739	.390	.591	.179	1.959
	Outcome	1.188	.781	2.312	.128	3.280	.709	15.170
	Constant	-2.026	1.752	1.336	.248	.132		
Step 3 ^a	Sex	.575	.832	.478	.489	1.778	.348	9.073
	Readmn.prd	-.542	.609	.793	.373	.582	.176	1.918
	Outcome	1.207	.778	2.405	.121	3.343	.727	15.366
	Constant	-1.639	1.155	2.014	.156	.194		
Step 4 ^a	Readmn.prd	-.487	.602	.656	.418	.614	.189	1.998
	Outcome	1.137	.767	2.194	.139	3.117	.693	14.028
	Constant	-1.239	.978	1.604	.205	.290		
Step 5 ^a	Outcome	1.028	.749	1.882	.170	2.795	.644	12.141
	Constant	-2.009	.321	39.139	.000	.134		
Step 6 ^a	Constant	-1.861	.287	41.948	.000	.156		

a. Variable(s) entered on step 1: t_Age, Sex, RF, Readmn.prd, Outcome.

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DAMA at KSHC (Between group comparison)						
		Non-DAMA	DAMA	OR (95% CI)	Total	p value
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4. DISCUSSION

In USA, Canada, and Iran. A study conducted in an Iranian hospital showed a prevalence of 7.8% that is closer our current study. [1] In contrast to the result reported earlier in a psychiatric hospital the prevalence was shown to be extremely high (34.4%). This difference could be due to the inability of the psychiatric patients to cope with the medical advice [2], while another's study also conducted in Iran showed overall DAMA was (5.8%). [3] Less rates were reported in study United states of America (1.44%) (Fig8), (1,1%) [9] The latter, could be due to more awareness and engagement of patients in treatment plans. Our study showed that reemission rate was higher in DAMA compared to non DAMA as well as admission in less than one month. Previous studies showed most of patients DAMA have more risk of readmitted with more severe morbidity and mortality. This results are in line with previously reported results in USA which found higher rates of readmission within and before 30-days [10]. Moreover, a previous found that readmission was higher within 90 days associated with bad health condition [3]. Earlier studies proved that DAMA is associated with an increased risk for mortality and readmission and 30-day mortality was significantly higher among DAMA than planned discharge [12]. DAMA Patients represent a problem of considerable importance. In current study we found personal reasons presented a high-risk factor for DAMA. Similar results were obtained in a study conducted in Iran were personal reasons was a high factor [4]. While other studies showed high contribution of the nurse and physician negligence compared to family and personal causes. This difference could be due to cultural and the level of the health care institution and type of hospital.

5. LIMITATIONS

The retrospective nature of the study represents a major limitation. Therefore, we were unable to distinguish discharges that reflected expressions of genuine patient preference from those that reflected patient reactions to mistreatment or inadequate treatment.

6. STRENGTH

It is the firstly that addressed AMI patients in the region. More prospective studies using in tern vertical and education of patients to reduce DMA prevalence must be conducted.

7. CONCLUSION

This study high little depth prevalence of DAMA among AMI to be of (7.3%), which could be a cause or readmission during the first month after discharge, Although the prevalence is comparable to international studies more education and strategies need to be addressed in order to reduce the prevalence and hence the readmission as well as the wellbeing of the patients. Although strategies targeted at trying to convince patients not to leave prematurely might diminish the early effects of leaving against medical advice, reducing the persistently elevated. Risk will likely require longitudinal interventions extending beyond hospital admission. In this study found the most reasons to leave hospital Personal/Other Reason with (83.8%).

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