



“ASSESSMENT OF QUALITY OF LIFE (QOL) IN POST-AMI (ACUTE MYOCARDIAL INFARCTION) PATIENTS”- A STUDY IN A TERTIARY CARE CENTRE OF ODISHA.

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ABSTRACT Increasing incidence of AMI patients is a global phenomenon & India is not immune to it. The quality of life in this vulnerable subset of patients following one year after the index event is not studied in great detail in our part of the country. Our study assessed this important parameter by using internationally accepted MacNew questionnaire, consisting of Emotional , Physical & Social domains. The overall QOL was perceived to be better among male patients & urban patients . Diabetes & hypertension played important roles in affecting the overall QOL. There was a trend towards gradual improvement with more passage of time from the first attack.

KEYWORDS :

Ischemic Heart Disease (IHD) accounts for approximately 15% of all deaths in Europe (1) and 16% in the USA (2). Now a days with wide range of treatment and therapeutic goals for patients with IHD, it is possible to reduce the mortality and enhance the quality of longer life. The Institute of Medicine has emphasized patient-centered care as one of the means to improve the quality of health care for patients (3). Both the US Food and Drug Administration (4) and the European Medicines agency (5) have provided guidance for selecting and using patient-reported outcome instruments. Further, the National Heart, lung and Blood Institute has stressed the importance of patient-reported health status measures such as health- related quality of life (HRQL) in clinical care and relevant clinical trials for patients with IHD (6). Patients with IHD present on a continuum of disease with angina, myocardial infarction (MI) & ischemic heart failure, the three most commonly reported IHD diagnoses.

Incidence of AMI is increasing through- out the world. By the year of 2030 the incidence rate is expected to increase by 120% for women and 137% for men in developing countries compared with 30-60% in developed countries.(7) In AMI, Disability- adjusted life years indicate the total burden of a disease, not only a negative result i.e. death. After AMI, a difficult period ensues for the patient i.e. to face the effects that the AMI may produce in one's life & the life style constraints it might bring (8). Diagnosis of AMI alters physical, psychosocial, spiritual well-being and adversely affects overall QOL. Patients after the diagnosis of AMI have to live with its consequences, such as breathlessness, particularly during night, which is reported as the most negative effect because it evokes fears of imminent death, disturbed sleep and may result in fragile physical and emotional state. Chest pain is another most important cause of worry. (9)

So overall management goal is to prevent acute & chronic complications while preserving a good QOL. The observed increase in the survival of patients with ischemic heart disease, together with its effect on the social, professional and family life of those suffering from it, have led researchers to consider that the traditional way of measuring morbidity and mortality are not adequate for assessing the potential benefits of health care intervention. For this reason, there is a common agreement on the need to use an indicator of subjective assessment of health, and of health related quality of life as a complementary criterion for monitoring the results of interventions, in these patients.(10, 11) It is also common knowledge that the enormous patient load & the resource constraint in government health institutions, even at tertiary care level can adversely affect the contributors in providing a better QOL to these patients , who are being treated in these type of setup. So this study is first of its kind to be conducted in the state of Odisha in such a highly vulnerable subset of patients to assess the QOL, because the purpose of all interventions is “not to add years to life but to add life to years.”

MATERIALS & METHODS :

It was a hospital based observational study of post -Acute myocardial

infarction patients coming to Out patients Dept (OPD) of cardiology department of S.C.B Medical College, Cuttack who satisfy the following inclusion & exclusion criteria.

Inclusion criteria -

Post AMI patients aged more than 18 years attending the cardiology OPD in hemodynamically stable state between 2 to 12 months after the index event between 1st January 2019 to 30th June 2019.

Exclusion criteria -

(1) – Unwilling to participate , (2)- patients with other comorbidity (like cancer ,stroke and cognitive impairment) which affect QOL. (3) - who have forgotten the exact date of AMI event.

The MacNew questionnaire was used to assess the QOL in the patients. The MacMaster-Newcastle, modification of original QLMI (MacNew QLMI) is a self- administered, condition specific, HRQOL instrument that is valid, reliable and responsive. It is simple to administer than the original QLMI. MacNew questionnaire consists of 27 items which fall into 3 domains (a 13 – item physical limitation domain scale, a 14 – item emotional function domain scale and 13 – item social function domain scale). Some of the items belong to more than one domain. There are 5 items that inquire about symptoms like angina/ Chest pain, shortness of breath, fatigue, dizziness and aching legs. The time frame for the MacNew is the previous two weeks that means how the patient feels about different aspects of their life during the past two weeks period. The QOL of all the subjects was assessed by MacNew questionnaire in a self- administered mode. This questionnaire was printed in both English and local language. The patient who was unable to answer both the format was assessed by the interviewer. After collection of data, analysis was done using SPSS version 16 and a p value < 0.05 was considered to be statistically significant.

Scoring of the MacNew is straight forward. The scoring for each question was done with the use of a Likert scale with 7 possible responses. The maximum possible score for any question belonging to a domain is 7 (high HRQL) and the minimum is 1 (low HRQL). The average score of each domain was calculated by adding the score values of each question and dividing it by the total no of questions for that domain .So the average score of any domain i.e. physical, emotional, social domain lies between 1-7 .The maximum and the minimum score of each domain is 7 and 1 respectively.

The average score for each domain was divided into four quartiles i.e 1st quartile (Q1), 2nd quartile (Q2), 3rd quartile (Q3), 4th quartile (Q4).

The value of
Q1 = 1 to ≤1.75
Q2 = 1.76 to ≤3.50

Q3 = 3.51 to ≤5.25
Q4 = 5.26 to ≤7

For Overall interpretation of QOL for a patient the following average score values for all the 3 domains were taken into consideration;

- Persons with the average score values of all the 3 domains in Q4 -----possess a very good QOL
- Persons with the average score values of all the 3 domains in Q3 or any one of the lowest average score value in Q3 i.e. example $(Q3 + Q3+ Q3) / (Q4 + Q4+ Q3) / (Q4+Q3+Q3)$ etc ----- possess a good QOL.
- Persons with the average score values of all the 3 domains in Q2 or any one of the lowest average score value in Q2 -----possess a average QOL.
- Persons with the average score value for all the 3 domains in Q1 or any one of the lowest average score value in Q1----- possess a poor QOL.

RESULTS –

Table-1

	MALE(n=605)		FEMALE(n=295)		TOTAL(n=900)	
	No	%	No	%	No	%
AGE(in years);						
30-45	112	18.5	39	13.2	151	16.7
45-60	292	48.2	165	55.9	457	50.7
>60	201	33.2	91	30.8	292	32.4
RESIDENCE;						
Urban	228	37.7	165	55.9	393	56.3
Rural	377	62.3	130	44.1	507	45.7
COHABITATION STATUS;						
Alone	21	03.5	13	04.5	34	03.8
Cohabit	584	96.5	282	95.5	866	96.2
MARITAL STATUS;						
Widows/Widower	104	17.2	91	30.9	195	21.7
Married	501	82.8	204	69.1	705	88.3
EDUCATIONAL STATUS;						
Elementary School	110	18.2	62	66.7	172	19.1
Secondary School	374	61.8	138	33.3	512	56.8
College	121	20.0	95	32.2	216	24.1

Table-2

	Q1	Q2	Q3	Q4	Total
1.EMOTIONAL DOMAIN					
Urban	02	04	74	152	232 X ² =3.032
Rural	03	11	358	296	668 yX ² =2.26
Total	05	15	432	448	900 df=2 p=0.21
2.PHYSICAL DOMAIN					
Urban	03	35	162	32	232 X ² =8.874
Rural	10	243	407	08	668 yX ² =5.68
Total	13	278	569	40	900 df= 3 p=0.03
3.SOCIAL DOMAIN					
Urban	03	32	162	35	232 X ² =2.865
Rural	01	191	418	58	668 yX ² =1.58
Total	04	223	580	93	900 df=2 p=0.23

Table-3

	Q1	Q2	Q3	Q4	Total
1.EMOTIONAL DOMAIN					

Diabetics	0	11	162	187	360 X ² =1.83
Nondiabetics	0	0	278	262	540 yX ² =0.17
Total	0	11	440	449	900 df=2 p=0.399
2.PHYSICAL DOMAIN					
Diabetics	09	121	202	28	360 X ² =4.5
Nondiabetics	0	152	376	12	540 yX ² =1.48
Total	09	273	578	40	900 df=3 p=0.21
3.SOCIAL DOMAIN					
Diabetics	0	102	203	55	360 X ² =2.67
Nondiabetics	0	116	382	42	540 yX ² =1.55
Total	0	218	585	97	900 df=2 p=0.26

Table-4

	Q1	Q2	Q3	Q4	Total
1.EMOTIONAL DOMAIN					
Hypertensive	0	0	198	212	410 X ² =0.85
Nonhypertensive	0	12	243	235	490 yX ² =0.02
Total	0	12	441	447	900 df=2 p=0.65
2.PHYSICAL DOMAIN					
Hypertensive	11	128	271	14	410 X ² =1.96
Nonhypertensive	0	143	317	30	490y X ² =0.11
Total	11	271	588	44	900 df=3 p=0.58
3.SOCIAL DOMAIN					
Hypertensive	0	104	258	48	410 X ² = 0.09
Nonhypertensive	0	121	319	50	490y X ² =0.04
Total	0	225	577	98	900 df=2 p=0.95

Table-5

	Q1 no. of cases	Q2 no. of cases	Q3 no. of cases	Q4 no. of cases	TOTAL
1.EMOTIONAL DOMAIN					
<6 month	04	03	250	215	472 X ² =1.66
>6 month	02	12	194	228	428 yX ² =0.30
Total	06	15	444	435	900 df=2 p=0.43
2.PHYSICAL DOMAIN					
<6 month	02	121	331	18	472 X ² =2.26
>6 month	10	148	248	22	428 yX ² =0.889
Total	12	269	579	40	900 df=3 p=0.52
3.SOCIAL DOMAIN					
<6 month	03	104	321	44	472 X ² =0.626
>6 month	02	123	261	42	428 yX ² =0.31
Total	05	227	582	86	900 df=2 p=0.73

Table-6

Overall QOL	MALE(n=605)		FEMALE(n=295)		Total(900)	
	No	%	No	%	No	%
Verygood	22	3.7	0	0	22	2.4
Good	373	61.8	131	44.4	504	56
Average Poor	203	33.3	164	55.6	367	41.7
	7	1.2	0	0	7	0.7

DISCUSSION :

WHO defines QOL "as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns (Group, World Health Organization Quality of Life (WHOQOL), 1993). A recent definition of QOL is as follows (11) "a composite measure of physical, mental and social well-being as perceived by each individual or by group of individuals – that is to say, happiness, satisfaction and gratification as it is experienced in such life concerns as health, marriage, family work, financial situation, educational opportunities, self-esteem, creativity, belongingness and trust in other." HRQL acts as a point of reference for measuring the effect of a disease on the individual, and is described and characterized by the patients themselves as the result of their appraisal of their health care. (12, 13)

The present study included 900 post-AMI patients who were between 2 months to 12 months of their AMI attack. The overall QOL of majority of post AMI cases i.e 504 (56%) was good followed by 367 (41.7%) cases with average QOL. The results of the present study revealed that physical component of QOL was reduced with increasing age. Similar observations were found in a study conducted by Isabel Cristina ,Ribeiro Saccomann et al (11) among the elderly individuals with heart failure. They reported that the QOL with regard to physical domain was most compromised.

Women had a poorer overall QOL and QOL dimensions, such as health, functioning, socio economic, psychological or spiritual aspects, after cardiac events compared with men. A similar observation was seen in a study conducted by Stefan Agewall et al (12) and Bogg et al (13).

Post-AMI cases living in urban areas had a better QOL than cases living in rural areas. The emotional domain parameters were relatively more suggestive. This finding was uniform cutting across the four quartiles & sex distribution. This may be due to their high socioeconomic status that provide them better health care facility. Another reason which might contribute to such discrepancy could be the fear about lack of qualified health professionals in rural areas to provide service in case of any emergency situations.

Both type 1 and type 2 diabetes mellitus have been associated with negative socioeconomic changes, increased morbidity, worsened physical capacity and overall decline in general health status. The current study shows that the nondiabetic post-AMI cases had a better physical and social QOL than diabetic post-AMI cases. The overall trend was unchanged with minor variations across the quartiles & between male & female participants. Fwurabena Simpson et al (14) in his study found that diabetic patients reported poorer functional status than nondiabetic patients.

In contrast to Diabetes, though Hypertension was more prevalent as a significant risk factor amongst the patients of AMI (40% vs 45%); the overall influence on the multiple domains of the QOL measures did not demonstrate statistically significant difference.

Likewise the patients staying alone had poorer QOL compared to those staying along with their family, their number was not statistically robust enough to draw any definite conclusion. Similarly, married patients had average QOL numerically better than widow/widower counterparts, which did not reach statistical significance.

The dimensions most affected after 2 months of AMI attack were those related to the physical component. The result was in agreement with those obtained by authors such as Hemingway et al (15) and Brown et al (16) who found that physical functioning was affected more than mental functioning. However, in patients with AMI, Beck and Cots (17) find only small differences in the physical component summary (PCS) of the SF-36 after 6 months of follow up and found no difference at an interval of one year.

CONCLUSION :

Acute Myocardial Infarction (AMI), besides being the main cause of death world-wide, has significant physical, emotional and social consequences for sufferers. So assessing their QOL is not only necessary for assessing the success of a treatment or operation, but also for highlighting certain problems which are not assessed by traditional methods and that may be of use for modifying or improving the treatment given, or for providing alternatives that improve patient's

clinical course. (13, 16, 17) This study showed that MI is combined with a significant and remarkable reduction in QOL with respect to all the three domains i.e. physical, social and emotional. The majority of post-AMI cases had a good emotional domain of QOL followed by social domain. The physical domain was most compromised. Male had a better QOL than their female counterpart in all the domains. The QOL of rural cases were more affected than urban cases. With increasing age, the physical domain of QOL was more affected. Impact of diabetes and hypertension can further worsen the QOL in AMI patients. Improving QOL after MI remains a challenge, which would require optimal measures of secondary prevention. However this study being a one time cross sectional study among the post-AMI cases attending Cardiology OPD, further follow up study at yearly interval will throw light on the long term effect of AMI on QOL.

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