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Ayurveda

COMPARATIVE ANALYSIS OF QUALITY OF LIFE IN CKD SUBJECTS BEFORE AND AFTER AYURVEDIC TREATMENT

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ABSTRACT

Background: It is established fact that End Stage Renal Disease with haemodialysis has poor survival and it is documented that quality of life (QOL) in CKD subjects is poor.

Methodology: WHO-BREF questionnaire was used to assess QOL in CKD subjects before starting Ayurvedic treatment and at the end of 6 month long Ayurvedic treatment.

Results: There were 39 (78%) subjects with CKD stage 5, 9 (18%) subjects with CKD stage 4 (8%) and 2 (4%) subjects with CKD stage 3B who completed Ayurvedic clinical trial for 6 months. There were 24 (48%) study subjects on bi/tri weekly haemodialysis dialysis from 2 weeks to 3 years. All of them were maintained without dialysis in due course of treatment. There was statistically highy significant improvement noted at the end of treatment in overall Quality of Life and General Health, and in all the 4 domains viz. Physical Health, Psychological, Social relationships and Environment. The improvement in QOL was not affected by factors like Age, sex, domocile status-urban-rural, educational status, Socio-economic status, Hypertension, when analyzed separately.

Conclusion: This study established that Ayurvedic treatment restored sense of wellbeing and statistically significantly improved Quality of Life in CKD subjects.

KEYWORDS :

Introduction:-

Chronic renal failure is reported to be a silent epidemic[1]. It is a global threat to health because therapy is very costly and life-long[2,3]. It is a matter of concern for all of us that prevalence of diabetes, hypertension and associated risk factors such as obesity, hypercholesterolemia and the metabolic syndrome increasing which along with increased life span of persons facilitate sustained and explosive growth of this epidemic[3].

Suresh M et al mentioned that Kidney diseases is ranked 3rd amongst life threatening diseases in India, after Cancer and Heart disease [5]. About 200,000 persons go into End Stage Renal Disease every year. Out of them it is the tragic fact that, 90% never see a nephrologist[6]. Those subjects who start haemodialysis, 60% are lost to follow-up within 3 months due to financial reasons[7,8].

Renal Replacement Therapy is only means for survival in ESRD patients, in which there are two options Dialysis & Kidney transplantation. Dialysis is not a cure. It may prolong life but does not cure kidney failure. Dialysis is a stop gap arrangement till kidney transplantation is possible, it may extend life for some period but it is established fact that treatment of end-stage renal disease with haemodialysis has a high mortality rate (20-50%) [9,10] as annual mortality among HD patients is 23%[11] and low quality of life[12]. Dialysis patients are at high risk of acquiring Hepatitis Viral infections and infection is the major cause of mortality & morbidity in patients on haemodialysis[13].

Maria Carollina Cruz et al mentioned that Quality of life is poorer in all the stages of CKD [14].

Thangamani Ramalingam, et al reported compromised health related quality of life, low level physical activity and moderate level of depression among hemodialysis patients [15].

There were many cross sectional studies focussed on QOL in CKD patients but there were very few prospective /cohort studies that assessed QOL after Ayurvedic treatment.

Aim:- To assess Quality of life in CKD subjects before and after Ayurvedic treatment.

Material and Methods:-

Clinical trial:- Open labeled Prospective study design- a systematic non randomized clinical trial Phase- I. This clinical trial was partly hospital-based study and partly domiciles study.

Place of study:-This Clinical Trial was conducted at Seth Tarachand Hospital of Tilak Ayurved Mahavidyalay, Pune.

Study period:- June 2012- Aug 2016

Sample size: 50

The details regarding methodology, observations and results were published in Indian Journal of Applied Research[16].

For the present study WHOQOL- BREF questionnaire was used as recommended by Skevington SM[17] that WHOQOL-BREF is an abbreviated 26-item version of the WHOQOL-100 containing items that were extracted from the WHOQOL-100 field trial data. Following parameters were analyzed viz. Overall Quality of Life and General Health, Domain 1: Physical Health, Domain 2: Psychological, Domain 3: Social relationships, Domain 4: Environment.

English and Marathi version was used for the questionnaire & it was given to study subjects for filling it. Those who were unable to fill up the questionnaire were assisted in filling it. The responses on zero day & at the end of study period were analyzed with the help of software.

Apart from this in the present study QOL was also assessed on follow up days by asking two questions: 1. How are filling now? 2. How is your ability to perform routine activities? The responses were noted and converted in to gradation of mean rank by applying Non parametric test -Friedman's test.

Results:-

Table No. 1: Demographic & clinical details of study subjects

Sex	Male -30 (60%) Mean age 49.87±15.16 Female - 20 (40%) Mean age 49.69±15.45
Education	Below 10th -19 (38%) SSC/HSC-12 (24%) Graduate-15 (30%) Post graduate- 4 (8%)
Socio-economic status	Upper class 18 (36%) Upper middle 29 (58%) Middle-6 (12%)

Domicile status	Urban -29 (58%) Rural-21 (42%)
Diabetics	24 (48%)
Hypertensives	32 (62%)
CKD stages 0 day (EPI) CKD stages180 day	Stage 5-39/50 (78%), Stage 4-9 (18%) Stage 3B- 2 (4%) Stage5-27/50 (54%), Stage 4-10/50- (20%), Stage 3 B-3/50 (6%), Stage 3A-8 (16%), Stage 2-2(4%)
On dialysis 0 day 180 day	24 (48%) < 1 year 20. < 3 years-4 0 (All subjects were free from dialysis)
Anemia 0 day 180 day	47/50 (94%) Mild-6, Moderate-24, Severe-17 Normal 8/47, Mild- 24/47, Moderate -15/47 Severe-0.
Mean Serum Creatinine mg %-0 day 180 day	7.37 mg/ dl with S.D. ±3.90, Range-2.19 to 21.6 mg/dl; Median-6.8 0.9 to 8.1 mg/dl; SD.±1.88, Range-0.9 to 8.1 mg/dl. Median-4.265, t=10.231; p (2 tailed) = 0.000 Highly significant
GFR by EPI method on 0 day 180 day	10.26 S.D. ±7.66 23.57 S.D. . ± 19.7. 1 t= 6.85; p (2 tailed)=0.000 Highly significant

Table No.2: Paired Sample statistics of Quality of Life.

Parameter		N	Mean	Std. Deviation	t value	P-value
Pair 1	Transformed Overall Quality of Life and General Health (Day 0)	50	6.5000	8.83523	47.553	0.000
	Transformed Overall Quality of Life and General Health (Day 180)	50	83.7500	11.91220		
Pair 2	Transformed Physical Health (Day 0)	50	.2857	5.98659	54.224	0.000
	Transformed Physical Health (Day 180)	50	66.8571	9.51883		
Pair 3	Transformed Psychological (Day 0)	50	6.0000	6.41975	63.472	0.000
	Transformed Psychological (Day 180)	50	70.6667	7.33666		
Pair 4	Transformed Social relationships (Day 0)	50	25.3333	9.95455	14.808	0.000
	Transformed Social relationships (Day 180)	50	44.3333	10.16307		
Pair 5	Transformed Environment (Day 0)	50	40.6875	6.75540	16.011	0.000
	Transformed Environment (Day 180)	50	52.4375	6.80829		

Since p value < 0.001, the level of significance for every pair, there is highly strong evidence to reject the null hypothesis.The improvement in all the facets of QOL was statistically highly significant.

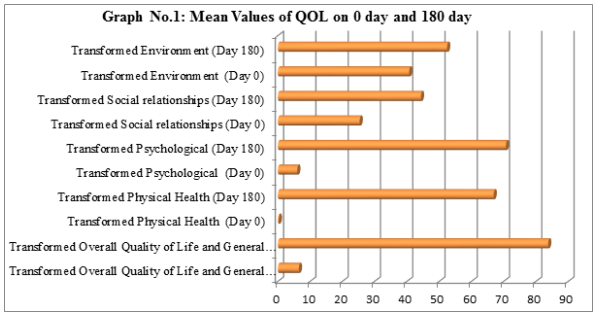


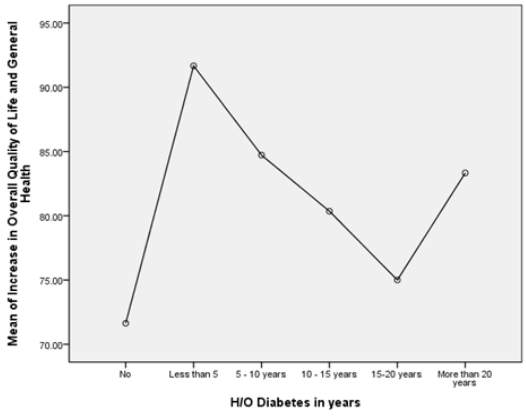
Table No. 3: Correlation of Quality of life and Glomerular Filtration Rate

		Increase in Overall Quality of Life and General Health	Increase in Physical Health	Increase in Psychological	Increase in Social relationships	Increase in Environment
GFR 0 day	Pearson Correlation	.228	.452**	.111	.027	-.072
	P value (2-tailed)	.111	.001	.445	.851	.621
	N	50	50	50	50	50
GFR 180 day	Pearson Correlation	.274	.580**	.108	.045	-.003
	P value (2-tailed)	.054	.000	.453	.756	.983
	N	50	50	50	50	50
*. Correlation is significant at the 0.05 level (2-tailed).						
**. Correlation is significant at the 0.01 level (2-tailed).						

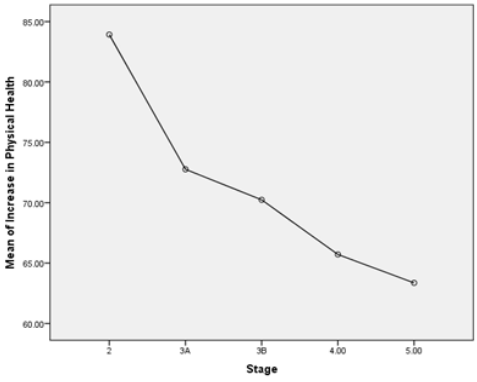
Table No.4: Effect of Anemia, Diabetes and CKD stages on Quality of life

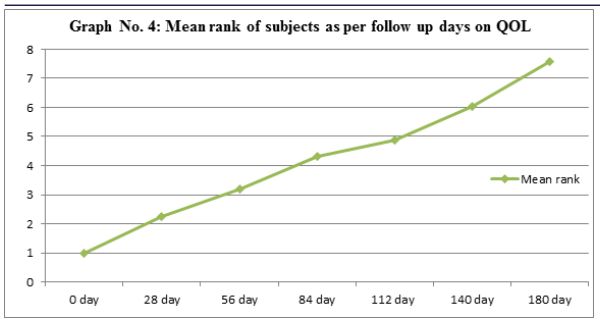
		Sum of Squares	df	Mean Square	F	P value
Anemia and Physical Health	Between Groups	727.671	3	242.557	3.763	.017 Highly significant
	Within Groups	2965.186	46	64.461		
	Total	3692.857	49			
No. of years of Diabetes and General health	Between Groups	2134.600	5	426.920	4.337	.003 Highly Significant
	Within Groups	4331.025	44	98.432		
	Total	6465.625	49			
CKD stages and Physical health	Between Groups	1235.882	4	308.970	5.659	.001 Highly Significant
	Within Groups	2456.975	45	54.599		
	Total	3692.857	49			

Graph No.2: No. of years of Diabetes Vs. QOL-Overall General Health



Graph no. 3: CKD stage Vs. 1ncrease in Quality of life-Physical health





It is clearly observed from Graph No. 4 that QOL was gradually improved from first follow up and reached to most satisfactory level at the end of treatment period.

Discussion:-

W.H.O. has defined Quality of life as: "the condition of life resulting from the combination of the effects of the complete range of factors such as those determining health, happiness (including comfort in the physical environment & a satisfying occupation), education, social & intellectual attainments, freedom of action, justice & freedom of expression"[18]. However QOL is difficult to measure. Ayurved has made it simple.

Ayurved has encompassed all above factors as Prasanna indriyatwa. What is well being is noted in **Sushrut samhita** as follows:

Samadoshah Samanagnischa Samdhatu malakriyah I
Prasannatmeindriya-manah Swastha Ityabhidhiyate II .Su Su. 15/41

When all the doshas, agni, dhatu & mala kriya are in the state of equilibrium, and **Aatma (soul),** Indriya, (Karmendriya & Dnyanendriya), Mana (mind) are in a state of prasannatwa (happiness), it is called as state of well being [19]. It is significant to note here that Ayurveda had considered Spirutual heath as part of health thousands of years ago but World Health Organization realized it after 50 years when Spiritual heath was introduced in the definition of health very lately in Jan 1998 [20].

'Vishado rogvardhananam shresthah,' Cha. Su. 25/40

Charakacharya had mentioned that the feeling of Vishad/ Aprasannatwa/ not feeing well is the first sign of drift from wellbeingness [21]. This feeling may not be measurable by physical means. That does not mean that the person having Aprasannatwa is Swastha or healthy. 'Aprasanna indriyatva', means not feeling well physically &/or mentally is the criteria that denotes drift from quality of life. In those olden days there were no means of investigations available to assess disequilibrium. The person who distinguishes abnormal functioning of the senses, the drift from quality of life at an early stage is a true Bhishak or physician as mentioned by **Sushrutacharya** as follows [22]:-

Doshadinam Tu-asmatam anumanen Lakshyayet I

Aprasanneindriyam Vikshyam Purusham Kushalo Bhishak II Su.Su 15/39

In the present study, sense of well being & restoration to Quality of life was assessed by filling WHOQOL-BREF questionnaire on zero day & at the end of treatment period.

In the present study, there was marked improvement noted in Overall Quality of Life and General Health transformed score was 83.75. Let us observe the domain-wise scores which were as follows: Physical health domain score was 66.86, Pshychological domain score was 70.66, Social relationship score was 43.33 & Environmental domain score was 52.44. The scores at Social & Environmental domain were improved satisfactorily but the real improvement noted was in overall General health and Psychological health followed by Physical health domain. There was statistically significant & marked improvement noted in all the facets of quality of life.

We desired to see if the improvement in Overall QOL and General health and all the 4 domains is significant when the factors like sex, domocile status-urban-rural, socioecnomic status, CKD stages, GFR, Anemia, Diabetes, hypertension considered separately. We applied Levene's Test for Equality of Variances for, sex and domicile status Urban-rural. For age & GFR we applied Pearson correlation test and applied One-way ANOVA test for educational status, socio-economic status, CKD stages, Anemia, Diabetes and hypertension to each parameter and found that the increase was not significant for age, sex, domocile status-urban-rural, educational status, socioecnomic status and hypertension when analyzed separately. We found that only in the domain of Physical health there was significant finding in factors namely, CKD stages, GFR, and Anemia. The mean increase in Physical health domain of QOL in CKD subjects who attained stage 2 was maximum, while the increase was less in subjects who remained in CKD stage 5. Similarly increase in GFR was found highly significant correlation in Physical health domain. We found that the increase in physical health was more in subjects with mild Anemia while in severe Anemia subjects the increase in physical health was comparatively less. When we compared No. of years of Diabetes, in overall General health domain, we observed maximum improvement in study subjects with Diabetes for 'Less than 5 years'. The pace of improvement seemed to be less till '15 – 20 years of diabetes' and then it was observed again increase in improvement in QOL for 'More than 20 years of diabetes'. It denoted that significant increase in overall health domain of QOL was found in initial 5 years of diabetes and old diabetics having diabetes for more than 20 years of age.

Sathvik BS, Parthasarthi et al conducted one study to assess the quality of life in haemodialysis study subjects using the WHOQOL- BREF questionnaire[12]. An attempt was made to compare the QOL of haemodialysis study subjects with that of healthy individuals, renal transplant study subjects and study subjects with chronic disease-asthma. The results of the study point out that the QOL of haemodialysis study subjects was considerably impaired to that of healthy individuals. Renal transplant study subjects had better QOL in all aspects compared to haemodialysis study subjects. Only in the environmental dimension was the QOL of haemodialysis patient was found to be statistically significantly lower than that of asthma study subjects. In the present study also the QOL score was very low at the beginning of the study; however, on completion of the treatment period there was highly significant improvement in all facets of QOL.

Ali Gholami et al[23] carried out one cross-sectional study on 522 staff of Neyshabur health-care centers. They observed a good internal consistency (α = 0.925) between four domains using WHOQOL-BREF questionnaire & they concluded that it was a reliable instrument to measure quality of life in health-care staff. This study has reinforced the utility and validity of WHOQOL-BREF questionnaire in CKD subjects.

Veena Joshi[24] reported that longitudinal studies were rarely conducted to assess QOL. Most of the studies were cross sectional. The present study was a prospective study in which probably for the first time an attempt was made to compare quality of life before and after 6 months of Ayurvedic line of treatment on CRF study subjects; most of them were having ESRD. Further the subjective element expressed by the individuals added qualitative aspect to this study.

Kwabene T Awuah et al [25] expressed need to focus shift from simply prolonging life to providing a better QOL. RRT simply prolongs life but this study established that Ayurvedic line of treatment increased longivity and provided better QOL.

Illustrations:- Here are few illustrations regarding restoration of quality of life. There was one female study subject- a teacher by profession, aged 27 years who was on dialysis for 8 months earlier, did not have to undergo dialysis since she was put on Ayurvedic treatment, after 8 weeks came smiling, she was looking fresh, smart with attractive hairstyle & disclosed that since last **10 months she did not see her face in mirror** but that day she saw her face and was very happy. She said that now life was meaningful to her. **She expressed her desire to live.** Earlier she did not have any hope of life realizing that dialysis was not cure for CRF. Now new hope of life changed her total outlook towards life. Ayurved has restored quality of life to several of such subjects.

One 73 year male study subject earlier on dialysis for 3 months was included in the present study. He did not have to undergo any dialysis during treatment period and later on he continued Ayurvedic treatment

for next 3 years, totally lived life without dialysis, died due to heart failure. His son- in- law communicated about his sad demise in following words, "Respected Madam, I wish to inform you about the sad demise of my father-in-law. I personally & with my family & xxx family express our gratitude for your sincere, methodological, & miraculous efforts in recovering him after he had been operated in xxx Hospital for dialysis. It was you who through your expertise made him **absolutely dialysis free till his demise & also gave him moral support to live normal life which he & us considered as ended three years back.** We all remain ever grateful for your wonderful efforts. May almighty give you long & happiest life, we pray with warmest regards. Thanks a lot!

From Anil xxx (Advocate & HR Consultant) & xxx Family".

These meaningful words spoke how Ayurved had restored quality of life in study subjects, so much so that the relatives do recognize & appreciate services received to their kith & kin even after death!

Many study subjects who were farmers, started working in their farms without feeling any discomfort. Others in other occupations continued their work to earn livelihood. Thus the Ayurvedic treatment has succeeded in restoring the quality of life in CKD subjects.

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