

Original Research Paper

General Medicine

FASTING OR POSTPRANDIAL LDL TO ACHIEVE LDL GOAL IN DIABETIC PATIENTS TAKING STATIN-A COMPARATIVE STUDY

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ABSTRACT Background and objective ; Evidence based medicine shows that there is an increased risk of atherosclerotic heart disease with elevated levels of LDL cholesterol and the risks more than proportionate if two risk factors coexist. It is cumbersome to check fasting levels in diabetic patients as it is not feasible to keep them fasting for long periods. In view of this we decided to conduct a study to check if fasting or postprandial LDL to achieve LDL goal in diabetic patients taking statin.

Material And Methods: This study was conducted as a cross sectional study, wherein written informed consent will be taken prior to the investigation after detailed information given to the participants patient party regarding the study on patients of all ages admitted in A. J. Hospital with uncomplicated Diabetes Mellitus type 2 who met a predefined inclusion and exclusion criteria initiated after obtaining clearance from the institutions ethical committee. Total cholesterol assay was done using a modified method of Liebermann-Burchard HDL-cholesterol by precipitation method . TG was estimated using a kit employing enzymatic hydrolysis of TG with lipases LDL-C was calculated using the Friedwald's formula. The data was collected in pre-prepared proforma and then transferred to a master chart for analysis. The collected data was analyzed using mean, mode for demographic data and frequency percentage for the analysis of the clinical data.

Statistical Analysis was done using SPSS software version 23.0.

A 'p' value less than 0.05(p<0.05) is considered significant.

Results and observations: In the study conducted on 102 patients of all ages admitted in A. J. Hospital and we found that males were affected more than females in our study with diabetes. Among the lipid abnormalities HDL showed the least variation between different time intervals and TG the most. The abnormality of renal functions was directly related to the HBA1C Levels .LDL at fasting had a negative correlation with thyroid hormone levels

Conclusions: In our study we intended to study the significance lipid levels for follow up of patients on statin therapy we concluded the following

• We recommend that statin use should be considered for any person with diabetes.

· It is equally efficacious to check the post prandial or the fasting lipid levels for follow up of patients on statin therapy

KEYWORDS:

INTRODUCTION

Elevated levels of LDL cholesterol are associated with increased risk of atherosclerotic heart disease. The plaques in the arterial walls of patients with atherosclerosis contain large amounts of cholesterol. The higher the level of low-density lipoproteins (LDL) cholesterol, the greater the risk of atherosclerotic heart disease; conversely, the higher the high-density lipoproteins (HDL) cholesterol, the lower the risk of coronary heart disease (CHD). The exact mechanism by which LDL particles result in the formation of atherosclerotic plaques—or the means whereby HDL particles protect against their formation—is not known. Theories suggesting oxidized LDL, and smaller sized LDL being atherogenic are being considered.

Diabetes mellitus is considered as CHD risk equivalent. A complete lipid profile (total cholesterol, HDL cholesterol, and triglyceride levels) after an overnight fast should be obtained as a screening test. Specific treatments are required for high LDL cholesterol levels. The goal of therapy should be to reduce the LDL cholesterol to below 100 mg/dL (2.59 mmol/L) or optimally to below 70 mg/dL (1.81 mmol/L). Evidence suggests that treatment with a statin is effective even if the starting LDL cholesterol is below 100 mg/dL (2.59 mmol/L).

It is cumbersome to check fasting levels in diabetic patients as it is not feasable to keep them fasting for long periods in view of this we decided to conduct a study to check if fasting or postprandial ldl to achieve ldl goal in diabetic patients taking statin.

AIMS AND OBJECTIVES OF THE STUDY

The aim of the study was to correlate the non-fasting LDL-C to

fasting LDL in well controlled Diabetic patients who are on statins.

MATERIAL AND METHODS

This study was conducted as a cross sectional study, wherein written informed consent will be taken prior to the investigation after detailed information given to the participants /patient party regarding the study on 50 patients of all ages admitted in A. J. Hospital with uncomplicated Diabetes Mellitus type 2 who met a predefined inclusion and exclusion criteria. The criteria were as follows

Inclusion criteria:

- Clinically stable Type 2 DM patients
- On treatment with statins for at least 3 months, not changed for last 3 months.

Exclusion criteria:

- Severe hypo/hyperglycemia
- Liver and kidney disease
- Malnutrition
- Pregnant and lactating women
- Excess alcohol consumption, Change in smoking habits
- Hypothyroidism/hyperthyroidism

Operational definitions

- Type 2 DM-Patients were classified as having type 2 diabetes mellitus using clinical criteria such as a present/prior history of usage of oral hypoglycemic agents or usage of combination of insulin and the oral hypoglycemic agents.
- 2. Type 1DM-This referred to patients who are presently on insulin and have been insulin requiring since diagnosis.

3. Dyslipidemia: Abnormal lipid profile consists of the following abnormalities either singly or in combination. These include triglyceride (TG) levels \geq 150 mg%, high density lipoprotein cholesterol (HDL-C) (for men \leq 40 mg% and women \leq 50 mg%), low density lipoprotein cholesterol (LDL-C) \geq 100 mg% $\frac{91819}{21819}^{1}$

Also considered abnormal is an elevated total cholesterol level $\geq 200\,\text{mg}\%^1\underline{\text{B}}^{\text{L}}$

Following selection the following was done

- History,(inc family history)to judge the likelihood of a familial lipid disorder
- A complete clinical examination (including fundus)
- CBC, ESR, Peripheral smear.
- Renal function test, Liver function test, TSH, Serum Electrolytes
- Fasting and Postprandial blood sugars, HbA1C.
- Urine Routine ,
- BT,CT,PT/INR. aPTT
- ECG
- Chest X-ray (PA view).
- USG Abdomen
- Fasting Lipid Profile, Fasting LDL, LDL after 2 hours, 4 hours.

Total cholesterol assay was done using a modified method of Liebermann-Burchard HDL-cholesterol by precipitation method TG was estimated using a kit employing enzymatic hydrolysis of TG with lipases

LDL-C was calculated using the Friedwald's formula ¹17¹ LDL = T.CHOL - HDL-C - TG/5 when the values of TG were less than 400 mg%.

The data was collected in pre-prepared proforma and then transferred to a master chart for analysis

DATA AND STATISTICAL ANALYSIS

The collected data was analyzed using mean, mode for demographic data and frequency percentage for the analysis of the clinical data.

Statistical Analysis was done using SPSS software version 23.0. A 'p' value less than 0.05(p<0.05) is considered significant. The various measures of central tendencies and graphical representations were used to analyze the data.

RESULTS AND OBSERVATIONS

In the study titled "FASTING OR POSTPRANDIAL LDL TO ACHIEVE LDL GOAL IN DIABETIC PATIENTS TAKING STATIN -A COMPARATIVE STUDY" conducted on 102 patients of all ages admitted in A.J. Hospital these were our observations

HDL values

Table 2. TIDE values			
	HDL-0	HDL-2	HDL-4
Mean	42.41	43.05	43.01
Median	41	43	42
Std. Deviation	11.235	10.984	10.802
Minimum	24	24	26
Maximum	73	71	76



Graph 2:HDL values

The above table and graph reveal that the level of HDL was peak levels at 2 hours after food

TRIGLYCERIDE Table 3:TRIGLYCERIDE

	TG0	TG-2	TG-4
Mean	167.42	209.25	207.61
Median	167	206.5	210.5
Std. Deviation	45.667	46.457	45.9
Minimum	74	112	103
Maximum	399	410	421



Graph 3::TRIGLYCERIDE

The above table and graph reveal that the level of triglycerides was peak levels at 2 hours after food

Table 4: Gender

		Frequency	Percent	
Valid	F	34	33.3	
	M	68	66.7	1
	Total	102	100.0	1



Graph 4:Gender

In our study males predominated the study with 66.7% of the total population.

THE DESCRIPTIVE VALUES OF THE OTHER VARIABLES.]

	N	Mean		Median	Std. Deviation	Min	imum	Maximum	
HBA1C	102	6.106		6.1	0.3912	5		7.1	
TSH	102	2.8176	47	2.7	1.010873	0.7		4.6	
S.Creatinine	102	1.164706		1.1	0.811507	0.7		1.5	
Duration of DM	102	6.21		6	1.511	2		9	
			LF	Г			Perce	nt	
AST-84/N				1				1	
N				100			98		

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TB-1.8/N	1	1
Total	102	100

Duration of DM

	Duration of DM	Percent
2	2	2
3	2	2
4	10	9.8
5	15	14.7
6	31	30.4
7	16	15.7
8	24	23.5
9	2	2
Total	102	100



PAIRED T TEST FOR COMPARISON OF THE LDL, HDL AND TG IN 2 TIME PERIODS

		Mean	Ν	Std. Deviation	Paired Difference	Differences		df	P VALUE
					Mean Difference	Std. Deviation	1		
Pair 1	LDL 0	105.69	102	14.7	-8.431	4.806	-17.717	101	<0.001
	LDL 2	114.12	102	15.539					
Pair 2	LDL 0	105.69	102	14.7	-8.794	4.932	-18.009	101	<0.001
	LDL 4	114.48	102	15.446					
Pair 3	LDL 2	114.12	102	15.539	-0.363	4.923	-0.744	101	0.458
	LDL 4	114.48	102	15.446					
Pair 4	HDL 0	42.41	102	11.235	-0.637	2.272	-2.832	101	0.006
	HDL 2	43.05	102	10.984					
Pair 5	HDL 0	42.41	102	11.235	-0.598	1.868	-3.233	101	0.002
	HDL 4	43.01	102	10.802					
Pair 6	HDL 2	43.05	102	10.984	0.039	2.337	0.169	101	0.866
	HDL 4	43.01	102	10.802					
Pair 7	TG 0	167.42	102	45.667	-41.833	12.607	-33.513	101	<0.001
	TG 2	209.25	102	46.457					
Pair 8	TG 0	167.42	102	45.667	-40.186	13.361	-30.375	101	<0.001
	TG 4	207.61	102	45.9					
Pair 9	TG 2	209.25	102	46.457	1.647	13.776	1.208	101	0.23
	TG 4	207.61	102	45.9					

INTERPRETATION

- On comparison of the mean values of LDL 0 and LDL 2 the mean values of LDL 2 is higher with a difference of 8.431 is statistically significant with a p value of <0.001.
- On comparison of the mean values of LDL 0 and LDL 4 the mean values of LDL 4 is higher with a difference of 8.794 is statistically significant with a p value of <0.001.
- On comparison of the mean values of LDL 2 and LDL 4 the mean values of LDL 4 is higher with a difference of 0.363 is statistically not significant with a p value of 0.458.
- On comparison of the mean values of HDL 0 and HDL 2 the mean values of HDL 2 is higher with a difference of 0.637 is statistically significant with a p value of 0.006.
- On comparison of the mean values of HDL 0 and HDL 4 the mean values of HDL 4 is higher with a difference of 0.598 is statistically significant with a p value of 0.002.
- On comparison of the mean values of HDL 2 and HDL 4 the mean values of HDL 2 is higher with a difference of 0.039 is statistically not significant with a p value of 0.866.
- On comparison of the mean values of TG 0 and TG 2 the mean values of TG 2 is higher with a difference of 41.833 is statistically significant with a p value of <0.001.
- On comparison of the mean values of TG 0 and TG 4 the mean values of TG 4 is higher with a difference of 40.186 is statistically significant with a p value of <0.001.
- On comparison of the mean values of TG 2 and TG 4 the mean values of TG 2 is higher with a difference of 1.647 is statistically not significant with a p value of 0.23.





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Table 8:HBA1C





Graph 8: HBA1C

The above table and graph reveal that 60 % of the study population had no control of diabetes adequately as their HbA1c levels were raised

S. CREATININE

Table 9:S.CREATININE

S.CREATININE	
NORMAL	88
ABNORMAL	14



Graph 9:S.CREATININE

The above table and graph reveal that 80% had normal renal function in the study

Table 10: Duration of DM

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	2.0	2.0	2.0
	3	2	2.0	2.0	3.9
	4	10	9.8	9.8	13.7
	5	15	14.7	14.7	28.4
	6	31	30.4	30.4	58.8
	7	16	15.7	15.7	74.5
	8	24	23.5	23.5	98.0
	9	2	2.0	2.0	100.0
	Total	102	100.0	100.0	



Graph 10:Duration of DM

MASTER CHART

DISCUSSION

Diabetes mellitus is one of the most important non communicable diseases and is considered as the health crisis of the 21st century.

In recent years the with an improvement in the field of medicine all chronic diseases are on the rise including DM the pattern of diseases suggests that there is a positive relationship between diabetes and cardiovascular abnormalities , so also there exists a similar relationship between dyslipidemia and cardiovascular events. When both dyslipidemia and diabetes co exists the association becomes very strong to develop a cardiovascular event. It is not possible that fasting levels be checked on patients with diabetes as the dosing schedule is fixed and it interferes with the routine of the patient if fasting levels need to be measured. Traditionally it is a dictum to check a fasting lipid profile for detection of dyslipidemia . In view of the above said we did a study titled **"FASTING OR POSTPRANDIAL LDL TO ACHIEVE LDL GOAL IN DIABETIC PATIENTS TAKING STATIN -A COMPARATIVE STUDY"** to see which levels are better to monitor patients on statin therapy

SUMMARY

In view of the increase in the incidence of chronic disease and the risk of cardiovascular diseases globally we conducted a titled "FASTING OR POSTPRANDIAL LDL TO ACHIEVE LDL GOAL IN DIABETIC PATIENTS TAKING STATIN -A COMPARATIVE STUDY" conducted on 102 patients of all ages admitted in A. J. Hospital and we found that

- Among the lipid abnormalities HDL showed the least variation between different time intervals and TG the most
- The abnormality of renal functions was directly related to the HBA1C Levels
- LDL at fasting had a negative correlation with thyroid hormone levels.
- Males were affected more than females in our study with diabetes

CONCLUSIONS

In our study we intended to study the significance lipid levels for follow up of patients on statin therapy we concluded the following We recommend that statin use should be considered for any person with diabetes at risk.

It is equally efficacious to check the post prandial or the fasting lipid levels for follow up of patients on statin therapy.

LIMITATIONS AND RECOMMENDATIONS

The limitations of the study were

- The study was done at a tertiary care centre, hence the data may not actually represent the problems of the population at large.
- The short duration and small sample size as compared to the disease burden
- Whether the demographic, paternal and maternal factors affect anthropometric measures was not evaluated We recommend that
- To validate this study longer periods of treatment follow up needed hence larger trials be done.

SL NO		Time(hrs)	LDL-C	HDL-C	TG	HBA1C	TSH	S.Creatinine	LFT
1		0	125	31	182	6.2	3.5	1.1	Ν
	m	2	132	33	239				
		4	137	31	227				
2		0	105	34	210	5.9	1.9	0.9	Ν
	m	2	117	31	259				
		4	112	37	235				

3		0	125	35	276	5.7	1.8	0.8	N
	f	2	132	38	312				
		4	131	39	298				
4		0	98	70	171	6.4	26	1.2	N
4	£	0	90	70	240	0.4	2.0	1.2	IN
	T	2	109	08	240				
		4	118	6/	231				
5		0	122	24	189	6.2	4.2	9	N
	f	2	130	27	256				
		4	136	26	216				
6		0	56	38	176	5.9	2.6	0.8	AST-84/N
	f	2	59	33	198				
		4	62	26	190				
7		4	03	50	109	6.5	2.2	1.2	N
/		0	94	56	183	6.5	2.2	1.2	IN .
	t	2	102	59	235				
		4	97	58	223				
8		0	133	42	174	6.3	3.8	1.1	N
	m	2	141	45	223				
		4	151	47	217				
9		0	130	49	224	5.8	16	1	N
	m	2	156	/3	221	5.0	1.0		
		2	142	45	270				
		4	143	40	250				
10		0	127	35	376	6.7	3.6	1.1	N
	f	2	142	38	399				
		4	137	32	410				
11		0	99	27	210	6.5	4.6	1.4	N
	f	2	132	27	278				
		4	111	29	265				
12		0	114	47	138	53	3.9	0.9	N
12	m	2	134	52	193	5.5	5.5	0.5	
		4	138	50	185				
13		0	101	35	211	6.1	0.8	0.8	N
	m	2	114	39	256				
		4	116	33	249				
14		0	117	45	154	6.3	3.2	0.9	N
	f	2	132	48	187				
		4	137	43	182				
15		0	101	26	111	5.5	4.1	1.5	N
	f	2	116	24	132				
1.6		4	121	27	145	7.4	2.0	1.2	
16		0	110	32	9/	7.1	3.8	1.2	N
	m	2	124	25	121				
17		0	120	42	172	5.8	24	11	N
17	f	2	126	44	198	5.5	2T		I V
		4	134	44	214				
18	1	0	129	27	134	6.3	1.8	0.9	TB-1.8/N
-	m	2	134	29	179				
		4	137	26	165				
19		0	92	45	123	6.6	2.7	0.8	N
	m	2	106	47	157				
		4	102	43	169				
20		0	123	55	112	6.1	1.5	1.4	N
	f	2	121	58	156				
		4	126	57	145				
21		0	99	45	81	6	1.9	1.1	N
	f	2	111	43	112				
		4	107	47	103	5.0	2.5	1.2	
22		0	/9	65	15/	5.8	2.6	1.3	N
	m	Z	93	0/	1/8				
22	-	4	02	20	192	65	1.0	0.0	N
23	m	2	108	24	120	0.5	1.9	0.9	í N
		Z	117	34	187				
1	1	1 7	1 1 4	,	102	1	1	1	1

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24		0	97	37	114	5.9	2.6	1.6	N
21	f	2	102	35	156	5.5	2.0	1.0	
	'	2	102	25	145				
0.5		4	108	35	145				
25		0	124	42	168	6.4	2.8	1.1	N
	m	2	128	45	211				
		4	127	42	179				
26		0	103	27	145	6.1	3.8	0.9	N
	m	2	97	33	192				
		4	109	29	185				
27		0	105	48	197	6.4	1.8	0.8	N
	f	2	112	45	243				
		4	107	47	218				
28		0	08	58	13/	61	1.6	0.0	N
20		0	100	58	167	0.1	1.0	0.9	
	m	2	109	54	107				
		4	105	55	145	_			
29		0	88	47	74	5	2.4	1.4	N
	f	2	96	49	112				
		4	92	46	117				
30		0	100	59	160	6.6	1.9	1.3	N
	f	2	108	61	215				
		4	102	60	202				
31		0	105	40	197	6.2	0.8	1.5	N
	m	2	112	44	245				
		4	109	42	236				
22			105	72	116	6.9	2.4	1.2	N
52		0	114	55	110	0.0	2.4	1.2	IN
	m	2	121	59	156				
		4	123	57	170				
33		0	118	45	157	6.1	4.6	1.2	N
	m	2	127	43	195				
		4	125	48	210				
34		0	106	43	106	6.3	3.3	1.3	N
	m	2	116	45	135				
		4	111	46	129				
35		0	106	50	146	6.7	1.3	1.1	N
	m	2	118	48	210				
		4	113	51	179				
26		0	02	65	112	6.5	2.7	0.0	N
50	m	2	07	63	167	0.5	2.7	0.9	IN IN
		2	97	63	107				
27		4	95	05	150	67	1.0	1.5	N
37		0	124	47	1/1	6./	4.6	1.5	N
	m	2	136	44	227				
		4	134	46	207				
38		0	109	52	194	5.9	1.3	1.4	N
	f	2	116	53	245				
		4	121	52	239				
39		0	113	61	146	6.2	2.7	1.1	N
	f	2	121	62	199				
		4	123	57	184				
40		0	101	37	152	6.7	4.1	1.2	N
	m	2	112	35	197				
		4	109	39	210				
41		0	126	42	127	6.3	1.9	0.9	N
	f	2	135	44	189				
		4	131	44	211				
42		0	119	71	119	6.2	3.7	0.8	N
	m	2	127	73	178	0.2	517	0.0	
		4	125	71	156				
43		0	70	68	127	57	26	1.4	N
CF		2	05	67	167	5.7	2.0	1.4	
	m	2	C0	0/	102				
4.4		4	88	0/	159	6.2	4.5	1.5	
44		U	116	34	9/	6.8	4.6	1.5	N N
	f	2	123	32	143				
		4	129	34	156				ļ
45		0	126	46	106	6.3	2.5	1.1	N
	m	2	132	45	167				
		4	133	47	145				

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40	1	0	110	42	150	6.4	1.0	1.2	N
46		0	110	43	159	6.4	1.9	1.2	IN
	f	2	117	46	207				
		4	125	43	193				
47		1	00	71	195	5.2	2.7	1.0	NI
47		0	88	/1	88	5.2	3./	1.2	IN
	f	2	94	69	126				
		4	89	69	119				
40			110	47	145	5.0	2.2	1	N
40		0	110	47	145	5.9	2.5	1	IN
	m	2	124	45	189				
		4	121	45	178				
40		0	02	42	110	6.1	1 /	1.2	N
49		0	92	42	119	0.1	1.4	1.5	IN
	m	2	97	44	167				
		4	107	44	159				
50		0	110	54	104	6.6	3.5	0.0	N
50	6	0	110	57	222	0.0	5.5	0.2	
	Ť	2	130	52	223				
		4	127	50	245				
51		0	121	67	94	6.4	2.7	1.2	N
	f	2	12/	64	145				
	1	۷	154	04	145				
		4	129	69	123				
52		0	104	44	224	5.7	4.1	1.4	N
	m	2	112	47	278				
		2	105	42	270				
L		4	125	42	203				
53		0	122			5.9	3.2	0.9	N
	m	2	131						
		-	100						
		4	120						
54		0	97			6.2	2.8	1.5	N
	m	2	107						
		4	109						
		-	101			5.0	4.2	1.2	N
55		0	101			5.8	4.3	1.2	IN
	f	2	112						
		4	110						
56		0	102			5.5	17	0.8	N
50		0	102			5.5	1.7	0.0	IN
	m	2	109						
		4	107						
57		0	87			59	27	0.9	N
	£	2	09			515	2.0	015	
	1	Ζ	90						
		4	96						
58		0	121			6.1	3.8	1.1	N
	m	2	127						
		2	127						
		4	128						
59		0	114			6.3	4.5	1	N
	m	2	123						
		4	120						
<u> </u>			120			5.0	2.5	1.2	N
60		0	109			5.9	2.5	1.2	IN
	m	2	116						
		4	114						
61		0	76			62	10	1	N
	ſ	2	,,,			0.2	1.2		
	Т	2	80						
		4	79						
62		0	97			5.9	2.6	1.1	N
	f	2	105						
	- ·		107						
		4	107						
63		0	120			5.8	3.5	0.7	N
	m	2	128						
		-	125						
		4	123						
64		0	104			5.7	2.6	1.2	N
	m	2	110						
		4	112						
65		4	112			EO	4.2	<u>^</u>	NI
65		4	112 109			5.8	4.2	0.8	N
65	m	4 0 2	112 109 115			5.8	4.2	0.8	N
65	m	4 0 2 4	112 109 115 117			5.8	4.2	0.8	N
65	m	4 0 2 4	112 109 115 117 102			5.8	4.2	0.8	N
65 66	m	4 0 2 4 0	112 109 115 117 102			5.8	4.2	0.8	N N
65 66	m	4 0 2 4 0 2	112 109 115 117 102 110			5.8	4.2	0.8	N
65 	m m m	4 0 2 4 0 2 4 4	112 109 115 117 102 110 112			5.8	4.2	0.8	N
65 66 67		4 0 2 4 0 2 4 0 2 4	112 109 115 117 102 110 112 98			5.8	4.2	0.8	N N N
65 66 67	m	4 0 2 4 0 2 4 0 2 4 0	112 109 115 117 102 110 112 98			5.8	4.2	0.8	N N N
65 66 67		4 0 2 4 0 2 4 0 2 4 0 2	112 109 115 117 102 110 112 98 106			5.8 5.7 6.1	4.2	0.8	N N N
65 66 67	m m m m	4 0 2 4 0 2 4 0 2 4 0 2 4	112 109 115 117 102 110 112 98 106 108			5.8	4.2	0.8	N N N
65 66 67 67	m m m m	4 0 2 4 0 2 4 0 2 4 0 2 4 0	112 109 115 117 102 110 112 98 106 108 97			5.8 5.7 6.1	4.2	0.8	N N N
65 66 67 68		4 0 2 4 0 2 4 0 2 4 0 2 4 0 2	112 109 115 117 102 110 112 98 106 108 97			5.8 5.7 6.1 6.7	4.2 3.7 4.3 2.9	0.8	N N N N

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		4	104					
69		0	118		6.3	3.4	0.9	Ν
	m	2	124					
		4	126					
70		0	110		5.4	1.9	1.3	N
	m	2	114					
71		4	112		<i>C</i> 1	0.7	0.0	N
/1	f	0	92		6.1	0.7	0.9	N
	1	2 A	96					
72		0	116		6.2	2.7	1.2	N
	m	2	124					
		4	121					
73		0	107		6.6	0.9	1.1	Ν
	m	2	114					
		4	112					
74		0	129		5.6	4.1	1.3	N
	m	2	132					
75		4	105		5.8	3.0	1.2	N
75	f	2	105		5.0	5.2	1.2	
		4	108					
76		0	89		5.9	4.1	1.1	N
	f	2	94					
		4	95					
77		0	114		5.7	1.2	1	N
	m	2	118					
70		4	11/		67	2.6	0.0	N
/8	m	2	97		0.7	3.0	0.9	IN
		4	105					
79		0	112		6.3	2.7	0.7	N
	m	2	119					
		4	121					
80		0	90		6.1	1.9	1.2	N
	f	2	97					
0.1		4	99		()	2.0		N
81	m	0	86		6.2	2.9	1.4	N
		<u>2</u> 4	93					
82		0	93		6.1	3.5	1.1	N
	m	2	104					
		4	102					
83		0	119		5.9	4.1	1	N
	m	2	127					
		4	125					
84		0	80		5.4	2.6	0.9	N
	m	<u>∠</u> <u>∧</u>	<mark>کک</mark> ۶۶					
85		0	118		5.8	2.5	0.9	N
	m	2	122		5.0	2.5	0.5	
		4	129					
86		0	125		5.8	3.5	0.8	Ν
	m	2	132	 				
		4	130					
87		0	110		6.1	2.4	1.1	N
	m	2 A	110					
88		4 0	98		62	0.9	0.0	N
00	m	2	105		0.2	0.9	0.9	IN
		4	107					
89		0	112		6.3	1.3	1.1	N
	m	2	119					
		4	124					
90		0	78		5.8	2.4	1.2	N
	m	2	85					
01		4	84 106		5.0	2 /	1 1	N
1 21	1		100		J.2	J. 1	1.1	1 1 1

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	m	2	112					
		4	115					
92		0	121		6.1	4.1	1.2	N
	m	2	128					
		4	129					
93		0	108		6.2	3.8	0.9	N
	m	2	117					
		4	114					
94		0	92		6.3	2.8	0.8	N
	f	2	102					
		4	100					
95		0	69		5.9	2.5	1.2	N
	m	2	76					
		4	75					
96		0	103		5.7	2.4	1.1	N
	m	2	116					
		4	114					
97		0	102		5.3	3.5	1.1	N
	m	2	104					
		4	104					
98		0	97		6.4	3.9	0.9	N
	f	2	105					
		4	107					
99		0	111		6.6	3.2	0.8	N
	m	2	117					
		4	110					
100		0	109		6.2	2.6	1.1	N
	m	2	116					
		4	119					
101		0	94		6.8	2.3	1.2	N
	m	2	99					
		4	102					
102		0	120		5.9	1.9	1.3	N
	m	2	122					
		4	124					

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