Int J Biol Med Res. 2012; 3(2): 1697-1703

Contents lists available at BioMedSciDirect Publications

International Journal of Biological & Medical Research

Journal homepage: www.biomedscidirect.com

Original Article

Low Dose Aspirin Therapy And Renal Function In A Group Of Elderly Patients In The Tropics

*** P.O Akinwusia , R Oluyombob , P.S Ogunroc , A.O Adenijid , O.O Okunolae , O.E Ayodelef**

[a,b,e,f] *Department of Medicine, LAUTECH Teaching Hospital, Osogbo, Osun state, Nigeria;*
[c] *Department of Chemical Pathology, LAUTECH Teaching Hospital, Osogbo, Osun State, Nigeria;*
[d] *Department of Obstetrics and Gynaecology, LAUTECH , Teaching Hospital,Osogbo,Osun State, Nigeria.*

ARTICLE INFO

Keywords:
Elderly
Low dose Aspirin
Renal functions

ABSTRACT

Aim; To determine whether low dose aspirin has any deleterious effects on renal functions in elderly Nigerian patients Methods; This is a prospective pilot study of 30 adult Nigerians older than 60years with various chronic ailments necessitating the use of low dose aspirin. Patients gave their consent and institutional ethical clearance was obtained. Each patient's baseline samples at enrolment (before commencing aspirin) served as control and subsequent weekly samples were compared. The weekly mean of each sex group was calculated and difference of means from baseline mean determined. Relative Risk and 95% Confidence Interval was subsequently calculated using the method described by Newcombe Wilson . Results; Majority (86.67%) had their basal renal functions in Chronic Kidney Diseases stages 1 and 2. The mean weekly serum and urinary electrolytes, urea, creatinine and uric acid parameters when compared with the corresponding baseline parameters did not change and the confidence interval calculated did not show any statistical significance. Also unlike previous studies, anaemia and hypoalbuminaemia did not affect renal function parameters. However use of low dose aspirin (75mg daily) had a negative effect on the renal function of those on concomitant diuretics and angiotensin converting enzyme inhibitors (ACEI) (Confidence interval showed statistical significance). Conclusions; This study only showed deleterious effect of short term, low dose aspirin (75mg daily) on kidney functions in elderly Nigerian patients that were on concomitant diuretics and ACEI. However, caution should also be exercised when dealing with those in renal stages 3-5 and the very elderly age ≥80 years.

1. Introduction

Aspirin is easily available across the counter in most countries including the developing ones such as Nigeria. When indicated, it is a common practice to maintain patients on long term low dose aspirin without assessing their renal status prior to initiation of treatment.

Low dose aspirin is increasingly being used as an antiplalelet to prevent thrombosis and other fatal cardiovascular outcomes in at risk patients [1, 2]. Elderly patients not only form the major bulk of these at risk patients [1, 2], they also do readily succumb to the deleterious effects of aspirin on renal functions. [3-5]. Various studies in the elderly, in Caucasian populations, had shown that 1-2 weeks of low dose aspirin (75mg – 325mg/day) caused significant decreases in both creatinine and uric acid clearances, as well as elevations of serum creatinine and uric acid.[6–8] These parameters improved on withdrawal of the drug but the decline in glomerular filtration rate however persisted 3 weeks post treatment [6–8]. Thus, long term aspirin administration may have a clinically important deleterious effect on renal function. [8] This study was therefore undertaken as a pilot study to ascertain whether low dose aspirin compromises renal function amongst Nigerians, and if so, alert practicing physicians on the need to show discretion when prescribing this drug.

2. Materials and Methods

This was a cohort of 30 elderly patients (age ≥ 60 years) of Ladoke Akintola University of Technology Teaching Hospital, South – West Nigeria, comprising of 16 male and 14 female patients at the commencement of the study. The United Nations definition of elderly person was used[9]. Institutional ethical

* Corresponding Author : Akinwusi P.O MB.CHB, FWACP.
Department of Medicine,
LAUTECH Teaching Hospital,
Osogbo, Osun State, Nigeria.
Tel: +2348037219451
E.mail: patakinwusi@gmail.com;

clearance was obtained and all the patients gave informed consent (verbal and written). The patients were those on long term care and new patients with various medical conditions necessitating the use of low dose aspirin, but in stable clinical conditions throughout the study. Each patient was followed up for a period of 6 weeks with a weekly clinic appointment.

Excluded from the study were subjects with a history of active peptic ulcer, gastro intestinal bleeding, chronic liver diseases, hyperuricaemia, serum creatinine > 1.5mg/dl (132.6 µmol/L), significant history of alcohol consumption, or recent use of anticoagulants, aspirin or non-steroidal anti-inflammatory drugs (NSAIDs). Patients were put on moderate protein intake (0.6-0.8/kg body weight) with the assistance of the dieticians a week prior to the commencement of the study and this was maintained throughout the 6 weeks study. Status quo was maintained for all other drugs (dosages unchanged), including diuretics. Patients who dropped out of the study were included in the calculations till their exit. The study was over a period of 12 months from January to December 2008.

Blood and 24 hour urine were collected before the first dose of aspirin. Aspirin 75mg/day was administered orally after breakfast for 2 weeks and then stopped. Follow-up then continued for a further 4 weeks.

Blood and 24 hour urine were collected at the end of each treatment week and the 4 consecutive week's follow-up: subjects were taught how to collect their 24 hour urine prior to their clinic day when the blood will be collected. After an overnight fast, 10ml of venous blood was collected at the ante cubital fossa in the sitting position without stasis: 5mls of the blood was put into lithium heparinised bottle and the remaining 5mls into a plain bottle. Serum was obtained after clotting and centrifugation at 3500r.p.m for 10 minutes and immediately stored at -20°c until they were analyzed. Sodium and potassium were analyzed using flame emission photometry (corning 410c machine), bicarbonate by method of back titration and chloride by rapid precision method[10].

Serum creatinine, blood urea nitrogen, uric acid and albumin were analysed by standard methods of Jaffes reaction[11], modified Berthelot[12], enzymatic urease[13], and bromocresol green[14] respectively. Urinary creatinine and uric acid clearances were evaluated by 24hr urine collection for creatinine and uric acid clearances.

2.1.Statistics

Data entry was into standard Pro-forma and statistical analysis was performed. Each patient's baseline samples at enrolment (before commencing aspirin) served as control and subsequent weekly samples were compared. The weekly mean of each sex group was calculated and difference of means from baseline mean determined. Relative Risk (RR) and 95% Confidence Interval (CI) was subsequently calculated using the method described by Newcombe Wilson .[15]

3. Results

A total of 30 subjects participated in this preliminary study. There were 14 (46.7%) females and 16 (53.3%) males with age range between 60 – 88 years and mean ages of 68.44years (+ 8.16) and 70.43 years (+ 9.09) for males and females respectively.

Table I shows the clinical data of the patients. 12 (40%) of the patients had more than one diagnosis. Systemic hypertension was the commonest diagnosis accounting for 18 (60.0%). Hypertension and diabetes mellitus co-existed in 7 (23.3%) of the study participants. All the patients were on multiple drugs with 28 (93.3%) being on diuretics.

Seventeen (56.7%) of the patients were on antihypertensive drugs (excluding thiazides and angiotensin converting enzyme inhibitors). Twelve (40%) were on Angiotensin converting enzyme inhibitors (ACEI).

Table II shows the stages of renal function based on the National Kidney Function/ DOQI guideline: 86.67% had their basal renal function in stages 1 and 2 based on CrCl.

Table Clinical Data

*Diagnosis	No. of patients	%
Systemic Hypertension	18	60.0
Congestive Cardiac Failure	03	10
Diabetes Mellitus	06	20
Peripheral artery disease	02	16.7
Carotid Aneurysm	05	3.3
Ischemic CVD	01	6.7
Parkinson disease	02	6.7
Obesity	01	3.3
Background COPD	03	10
**Drugs		
Diuretics	28	93.3
Anti BPH (& receptor blocker)	01	3.3
Anti-hypertensives	17	56.7
(excluding Thiazides & ACEI)	02	6.7
Digoxin	05	16.7
OHA	02	6.7
Insulin	12	40.0
ACEI		
LEGEND:		

*Some patients had multiple diagnoses
**All the patients were on multiple drugs
CVD -Cerebrovascular disease.
COPD - Chronic Obstructive Pulmonary Disease
BPH-Benign Prostatic Hypertrophy
OHA-Oral Hypoglycaemic Agents
ACEI-Angiotension Converting Enzyme Inhibitors

TABLE II
NKF/DOQI CLASSSIFICATION OF PATIENTS IN THIS STUDY.

GFR (ml/min)	MALE	FEMALE	%
≥90	CrCl%	CrCl%	17(56.7)
60-89	13(43.3)	4(13.3)	9(30.0)
30-59	3(10.0)	6(20.0)	4(13.3)
15-29		4(13.3)	
<15			

KEY:
GFR - GLOMERULAR FILTRATION RATE
CrCl - CREATININE CLEARANCE

TABLE III. COMPARISON OF WEEKLY PARAMETERS WITH THE BASELINE PARAMETERS MALES

Parameters	Weeks (n)	Mean	SD	DOM	C.I	SIGNIFICANCE
*Serum Potassium (mmol\L)	Wk 0 (16)	3.506	0.377			
	Wk 1 (16)	3.413	0.453	0.0938	-0.21 – 0.39	NS
	Wk 2 (15)	3.567	0.387	-0.0604	-0.34 – 0.22	NS
	Wk 3 (13)	3.615	0.456	-0.109	-0.43 – 0.21	NS
	Wk 4 (12)	3.725	0.277	-0.219	-0.48 – 0.05	NS
	Wk 5 (12)	3.575	0.311	-0.0687	-0.34 – 0.21	NS
	Wk 6 (12)	3.608	0.403	-0.102	-0.41 – 0.20	NS
Serum Urea	Wk 0 (16)	6.475	3.912			
	Wk 1 (16)	6.038	3.318	0.438	-2.18 – 3.06	NS
	Wk 2 (15)	5.093	1.487	1.382	-0.82 – 3.58	NS
	Wk 3 (13)	5.108	1.278	1.367	-0.96 – 3.69	NS
	Wk 4 (12)	4.792	1.391	1.683	-0.75 – 4.12	NS
	Wk 5 (12)	5.000	1.109	1.475	-0.93 – 3.88	NS
	Wk 6 (12)	5.117	1.211	1.358	-1.05 – 3.77	NS
Plasma Albumin	Wk 0 (16)	34.313	6.935			
	Wk 1 (16)	34.250	8.218	0.0625	-5.43 – 5.55	NS
	Wk 2 (15)	33.733	6.798	0.579	-4.47 – 5.63	NS
	Wk 3 (13)	34.692	8.351	-0.380	-6.20 – 5.44	NS
	Wk 4 (12)	34.917	7.280	-0.604	-6.16 – 4.96	NS
	Wk 5 (12)	36.0833	7.787	-1.771	-7.51 – 3.97	NS
	Wk 6 (12)	36.167	7.918	-1.854	-7.64 – 3.93	NS
Urinary uric acid	Wk 0 (16)	1.184	0.318			
	Wk 1 (16)	1.233	0.236	-0.049	-0.25 – 0.15	NS
	Wk 2 (15)	1.234	0.273	-0.050	-0.27 – 0.17	NS
	Wk 3 (13)	1.220	0.224	-0.036	-0.25 – 0.18	NS
	Wk 4 (12)	1.270	0.195	-0.086	-0.30 – 0.13	NS
	Wk 5 (12)	1.332	0.260	-0.148	-0.38 - 0.08	NS
	Wk 6 (12)	1.350	0.236	-0.167	-0.39 – 0.06	NS
Urinary Creatinine	Wk 0 (16)	1341.56	297.02			
	Wk 1 (16)	1401.88	316.24	-60.32	-281.83 – 161.19	NS
	Wk 2 (15)	1368.40	209.36	-26.84	-216.81 – 163.13	NS
	Wk 3 (13)	1307.62	208.88	33.94	-166.44 – 234.32	NS
	Wk 4 (12)	1468.50	363.93	-126.94	-383.63 – 129.75	NS
	Wk 5 (12)	1455.75	271.90	-114.19	-339.21 – 110.83	NS
	Wk 6 (12)	1513.75	376.40	-172.19	-433.52 – 89.14	NS
Volume of Urine (ml)	Wk 0 (16)	1048.38	275.20			
	Wk 1 (16)	917.19	317.46	131.19	-83.32 – 345.70	NS
	Wk 2 (15)	1112.33	286.74	-63.95	-270.37 – 142.47	NS
	Wk 3 (13)	1075.39	273.03	-27.01	-237.11 – 183.09	NS
	Wk 4 (12)	955.00	363.41	93.38	-154.31 – 341.07	NS
	Wk 5 (12)	991.25	314.77	57.13	-172.55 – 286.81	NS
	Wk 6 (12)	948.33	244.93	100.05	-106.25 – 306.35	NS
Plasma Creatinine	Wk 0 (16)	91.06	18.67			
	Wk 1 (16)	89.56	17.95	1.50	-11.72 – 14.72	NS
	Wk 2 (15)	81.60	22.62	9.46	-5.73 – 24.65	NS
	Wk 3 (13)	84.77	13.40	6.29	-6.38 – 18.96	NS
	Wk 4 (12)	80.83	10.94	10.23	-2.22 – 22.68	NS
	Wk 5 (12)	85.25	10.02	5.81	-6.44 – 18.06	NS
	Wk 6 (12)	84.17	14.56	6.89	-6.50 – 20.28	NS

Plasma Uric acid	Wk 0 (16)	0.328	0.0852			
	Wk 1 (16)	0.324	0.0497	0.0032	-0.05 – 0.05	NS
	Wk 2 (15)	0.320	0.0470	0.0076	-0.04 – 0.06	NS
	Wk 3 (13)	0.313	0.0488	0.0151	-0.04 – 0.07	NS
	Wk 4 (12)	0.333	0.0462	-0.0055	-0.06 – 0.05	NS
	Wk 5 (12)	0.333	0.0454	-0.0057	-0.06 – 0.05	NS
	Wk 6 (12)	0.322	0.0429	0.0053	-0.05 – 0.06	NS
Creatinine clearance	Wk 0 (16)	106.913	24.266			
	Wk 1 (16)	97.869	22.533	9.044	-7.86 – 25.95	NS
	Wk 2 (15)	117.707	20.807	-10.794	-27.45 – 5.86	NS
	Wk 3 (13)	118.254	20.654	-11.341	-28.76 – 6.07	NS
	Wk 4 (12)	113.325	21.503	-6.412	-24.57 – 11.75	NS
	Wk 5 (12)	114.217	23.317	-7.304	-26.04 – 11.43	NS
	Wk 6 (12)	115.092	22.500	-8.179	-26.65 – 10.30	NS
Uric acid clearance	Wk 0 (16)	3.010	1.353			
	Wk 1 (16)	2.475	1.135	0.5438	-0.36 – 1.45	NS
	Wk 2 (15)	3.067	1.095	-0.0479	-0.96 – 0.86	NS
	Wk 3 (13)	2.931	0.893	0.0878	-0.81 – 0.99	NS
	Wk 4 (12)	2.567	1.056	0.4518	-0.52 – 1.42	NS
	Wk 5 (12)	2.833	1.102	0.1858	-0.80 – 1.17	NS
	Wk 6 (12)	2.775	0.778	0.2438	-0.66 – 1.14	NS

***Potassium - Initial marginal rise in serum potassium by 1st week, however, by 2nd week, the mean level dropped below the baseline, maximal by week 4.**

ıramеters	Weeks (n)	Mean	SD	DOM	C.I	SIGNIFICANCE
	Wk 0 (14)	3.536	0.680			
	Wk 1 (14)	3.743	0.595	-0.207	-0.70 – 0.29	NS
	Wk 2 (14)	3.557	0.643	-0.021	-0.54 – 0.49	NS
Potassiu (mmc \L)	Wk 3 (13)	3.331	0.715	0.205	-0.35 – 0.76	NS
	Wk 4 (13)	3.562	0.519	-0.026	-0.51 – 0.46	NS
	Wk 5 (13)	3.600	0.607	-0.064	-0.58 – 0.45	NS
	Wk 6 (13)	3.777	0.537	-0.241	-0.73 – 0.25	NS
	Wk 0 (14)	5.014	2.392			
	Wk 1 (14)	5.357	2.314	-0.343	-2.17 – 1.49	NS
	Wk 2 (14)	5.186	1.942	-0.171	-1.86 – 1.52	NS
	Wk 3 (13)	5.031	2.073	-0.017	-1.80 – 1.76	NS
	Wk 4 (13)	5.562	4.351	-0.547	-3.30 – 2.21	NS
	Wk 5 (13)	4.677	2.034	0.337	-1.43 – 2.10	NS
	Wk 6 (13)	4.931	1.977	0.084	-1.66 – 1.83	NS
	Wk 0 (14)	35.214	8.859			
	Wk 1 (14)	34.000	8.067	1.214	-5.37 – 7.80	NS
	Wk 2 (14)	34.500	8.564	0.714	-6.06 – 7.48	NS
Albumin	Wk 3 (13)	35.385	9.377	-0.170	-7.40 – 7.06	NS
	Wk 4 (13)	34.539	8.540	0.676	-6.23 – 9.58	NS
	Wk 5 (13)	35.692	7.825	-0.478	-7.12 – 6.17	NS
	Wk 6 (13)	34.923	6.238	0.291	-5.83 – 6.41	NS
	Wk 0 (14)	1.551	0.714			
	Wk 1 (14)	1.567	0.766	-0.015	-0.59 – 0.56	NS
	Wk 2 (14)	1.586	0.735	-0.034	-0.60 – 0.53	NS

Weekly Parameters	**Baseline Serum Albumin** P-Value (95% C.I)	**Baseline PCV** P-Value (95% C.I)	**Use of ACEI** P-Value (95% C.I)
Baseline Plasma Urea	0.676 (-3.047 - 2.004)	0.307 (-7.497 - 2.447)	0.041 (0.103 - 4.801)
Week 1 Plasma Urea	0.539 (-2.830 - 1.513)	0.429 (-6.016 - 2.631)	0.026 (0.288 - 4.287)
Week 2 Plasma Urea	0.425 (-0.789 - 1.818)	0.760 (-2.974 - 2.196)	0.085 (-0.160 - 2.323)
Week 3 Plasma Urea	0.370 (-0.766 - 1.983)	0.254 (-3.986 - 1.103)	0.011 (0.418 - 2.844)
Week 4 Plasma Urea	0.300 (-1.313 - 4.076)	0.739 (-5.835 - 8.110)	0.027 (0.418 - 2.844)
Week 5 Plasma Urea	0.605 (-1.031 - 1.729)	0.641 (-4.299 - 2.699)	0.143 (-0.351 - 2.279)
Week 6 Plasma Urea	0.220 (0.522 - 2.152)	0.678 (-4.197 - 2.780)	0.039 (0.075 - 2.573)
Baseline Plasma Creatinine	0.828 (-12.436 - 15.419)	0.076 (-50.038 - 2.610)	0.031 (1.407 - 27.022)
Week 1 Plasma Creatinine	0.715 (-10.908 - 15.694)	0.097 (-46.647 - 4.075)	0.013 (3.455 - 27.313)
Week 2 Plasma Creatinine	0.083 (-1.850 - 28.033)	0.241 (-47.885 - 12.588)	0.021 (2.747 - 31.215)
Week 3 Plasma Creatinine	0.226 (-5.217 - 21.026)	0.657 (-30.720 - 19.720)	0.228 (-5.240 - 20.933)
Week 4 Plasma Creatinine	0.065 (-0.878 - 26.553)	0.922 (-39.251 - 35.667)	0.397 (-8.432 - 20.496)
Week 5 Plasma Creatinine	0.406 (-6.441 - 15.363)	0.611 (-20.923 - 34.840)	0.322 (-5.499 - 16.025)
Week 6 Plasma Creatinine	0.215 (-4.933 - 20.790)	0.293 (-15.768 - 50.018)	0.915 (-13.906 -12.534)
Baseline Plasma Uric Acid	0.184 (-0.102 - 0.021)	0.618 (-0.0947 - 0.157)	0.137 (-0.106 - 0.015)
Week 1 Plasma Uric Acid	0.845 (-0.052 - 0.043)	0.353 (-0.504 - 0.137)	0.056 (-0.877 - 0.011)
Week 2 Plasma Uric Acid	0.857 (-0.055 - 0.046)	0.309 (-0.480 - 0.146)	0.207 (-0.793 - 0.179)
Week 3 Plasma Uric Acid	0.395 (-0.035 - 0.085)	0.431 (-0.0684 - 0.155)	0.396 (-0.084 - 0.345)
Week 4 Plasma Uric Acid	0.556 (-0.050 - 0.090)	0.794 (-0.201 - 0.155)	0.542 (-0.900 - 0.486)
Week 5 Plasma Uric Acid	0.375 (-0.014 - 0.029)	0.807 (-0.148 - 0.117)	0.552 (-0.067 - 0.037)
Week 6 Plasma Uric Acid	0.211 (-0.0079 - 0.018)	0/827 (-0.141 - 0.113)	0.456 (-0.067 - 0.031)
Baseline Creatinine Clearance	0.672 (-23.937 - 15.660)	0.693 (-31-899 - 47.328)	0.001 (-45.423 - - 12.676)
Week 1 Creatinine Clearance	0.738 (-23.929 - 17.159)	0.728 (-34.038 - 48.124)	0.027 (-40.244 - -2.553)
Week 2 Creatinine Clearance	0.801 (-16.366 - 12.761)	0.403 (-39.927 - 16.557)	0.792 (-12.616 - 16.369)
Week 3 Creatinine Clearance	0.132 (-3.400 - 24.338)	0.080 (-2.918 - 48.102)	0.225 (-22.555 - 5.570)
Week 3 Uric Acid Clearance	0.520 (-0.899 - 1.730)	0.582 (-1.798 - 3.131)	0.608 (-0.984 - 1.645)
Week 4 Uric Acid Clearance	0.674 (-1.540 - 2.340)	0.626 (-3.736 - 6.078)	0.539 (-1.339 - 2.497)
Week 5 Uric Acid Clearance	0.442 (-2.148 - 0.969)	0.995 (-4.013 - 3.988)	0.811 (-1.384 - 1.751)
Week 6 Uric Acid Clearance	0.905 (-1.200 - 1.348)	0.743 (-2.704 - 3.738)	0.542 (-0.879 - 1.632)

KEY:
PCV - PACKED CELL VOLUME
ACEI – ANGIOTENSIN CONVERTING ENZYME INHIBITORS

acid	Wk 3 (13)	1.759	1.084	-0.208	-0.93 – 0.51	NS
	Wk 4 (13)	1.796	1.059	-0.245	-0.96 – 0.47	NS
	Wk 5 (13)	1.795	1.056	-0.244	-0.95 – 0.47	NS
	Wk 6 (13)	1.793	0.966	-0.242	-0.91 – 0.43	NS
Creatinii	Wk 0 (14)	1344.29	268.99			
	Wk 1 (14)	1233.29	130.25	111.00	-53.19 – 275.19	NS
	Wk 2 (14)	1308.50	189.60	35.79	-145.00 – 216.58	NS
	Wk 3 (13)	1313.39	152.39	30.90	-144.29 – 206.09	NS
	Wk 4 (13)	1344.62	248.89	-0.33	-206.21 – 205.55	NS
	Wk 5 (13)	1273.92	213.51	70.37	-123.14 – 263.88	NS
	Wk 6 (13)	1170.00	139.96	174.29	2.26 – 346.32	NS
Urine (m	Wk 0 (14)	1004.29	189.82			
	Wk 1 (14)	1033.71	334.65	-29.42	-240.78 – 181.94	NS
	Wk 2 (14)	1098.57	295.56	-94.28	-287.25 - 98.69	NS
	Wk 3 (13)	1139.23	280.09	-134.94	-323.32 – 53.44	NS
	Wk 4 (13)	1030.77	341.77	-26.48	-243.44 – 190.48	NS
	Wk 5 (13)	1036.92	367.64	-32.63	-262.01 - 196.75	NS
	Wk 6 (13)	1063.08	268.04	-58.79	-241.79 – 124.21	NS
Creatinii	Wk 0 (14)	86.36	18.16			
	Wk 1 (14)	86.50	17.44	-0.14	-13.97 – 13.69	NS
	Wk 2 (14)	82.57	18.24	3.79	-10.35 – 17.93	NS
	Wk 3 (13)	85.08	19.40	1.28	-13.61 – 16.17	NS
	Wk 4 (13)	85.54	21.96	0.82	-15.10 – 16.74	NS
	Wk 5 (13)	88.00	15.56	-1.64	-15.10 – 11.82	NS
	Wk 6 (13)	88.54	16.87	-2.18	-16.10 – 11.74	NS
as m a l	Wk 0 (14)	0.335	0.083			
	Wk 1 (14)	0.349	0.074	-0.014	-0.07 – 0.05	NS

KEY:
SD = Standard deviation
DOM = Difference of means
C.I = Confidence Interval

4. Discussion

Data entry was into standard Pro-forma and statistical analysis was performed. Each patient's baseline samples at enrolment (before commencing aspirin) served as control and subsequent weekly samples were compared. The weekly mean of each sex group was calculated and difference of means from baseline mean determined. Relative Risk (RR) and 95% Confidence Interval (CI) was subsequently calculated using the method described by Newcombe Wilson .[15]

5. Conclusion

This study has shown deleterious effect of short term, low dose aspirin (75mg) on the renal function of only the subset of elderly patients on concomitant diuretics and ACEI therapy. The 6 weeks study was cumbersome for most of the patients and this precluded participation of a lot of eligible geriatric patients. Not all the 30 patients completed the study but their data for the period of participation were included in the analysis.

The small size occasioned by the tasking nature of the study in a peculiar setting might have affected the result. We suggest more studies in our own environment with larger sample size and possibly in a predominantly geriatric centre.

Acknowledgements

We are grateful to Mr Adeola Ayileka and Mr Peter Awosanmi of the malaria research unit of the hospital for the assistance rendered during the period of sample collection and data entry. The assistance rendered by Mr Nureni Agbaje of the chemical pathology department.The study was funded by the authors.

6. References

[1] Ancheta JI , Reding MJ, Stroke diagnosis and management. In: Hazzard WR, Blass JP, Ettinger WH, Halter JB, Outslander JG, eds. MDRFD = Modification of Diet in Renal Disease Principals of Geriatric Medicine and Gerontology . 4th edition. New York: McGraw-Hill, 1999:124

[2] Gurwitz JH, Gore JM, Goldberg RJ, Rubiso M, Chandra N, Rogers WJ. Recent age related trends in the use of thrombolytic therapy in patients who have had actute myocardial infarction. Ann Intern Med. 1996: 124: 283-91

[3] Silagy CA, McNeil JJ, Donnan GA, Tonkin AM, Worsam B, Campion K. Adverse effects of low dose aspirin in a healthy elderly population. Clin Pharmacol Ther 1993, 54:84-9

[4] Krumbholtz HM, Radford MJ, Ellerbeck EF, et al. Aspirin in the treatment of acute myocardial infarction in elderly Medicare beneficiaries. Circulation 1995;92:2841-2847

[5] Gurtwitz JH, Avorn J, Ross-Degnan D, Lipsitz LA. Nonsteroidal anti-inflammatory drug-associated azotemia in the very old. JAMA 1990;264:471-475

[6] Caspi D, Lubart E, Graff E, Habot B, Yaron M, Segal R. The effect of mini-dose aspirin on renal function and uric acid handling in elderly patients. Arthritis Rheum 2000;43:103-108

[7] Segal R, Lubart E, Leibovitz A, et al. Early and late renal effects of mini-aspirin in elderly patients. AM J Med. 2004;115:462-466

[8] Refael Segal, Emilia Lubart, Arthur Leibovitz, Adrian Laina, Dan Caspi. Renal effects of low dose Aspirin in elderly patients IMAJ 2006;8:670-682.

[9] World Health Organisation. Health Statistics and Health Information systems. Definition of an older or the elderly person. Sourced online through Google 2012.

[10] Malmstadt HV and Winefordner JD. Determination of Chloride in Blood Serum, Plasma, or other biologic Fluids by a New Rapid Precision Method Clin. Chem. 1959;5:284-296

[11] Haeckel R, Simplified determinations of the 'true' creatinine concentration in serum and urine. J. clin . chem.. clin. Biochem. 1980;18:385-:194

[12] Fawcett JK, Scott JE. A rapit and precise method for determination of urea. J Clin Pathol. 1960; 13:156-159

[13] Fossati P, Prencipe L, Berti G, Uses of 3, 5-dichloro-2-hydroxy-benzensulfonic acid/4-aminophenazone chromogenic system in direct enzymatic assay of uric acid in serum and urine. Clin chem.. 1980;26:227-231

[14] Doumas BT, Watson WA, Biggs HC. Albumin standards and the measurement of serum albumin with bromocresol green. Cin. Chim. Acta 1971;31:87-96.

[15] Newcombe RG. Interval estimation of difference proportions. Stat Med 1998;17(8):873-890.

[16] Schramm A, Jenett M, Gerhardt KH. Changes in Kidney function and morphology in the aged. Z Genrontol, 1981;14(5):354-369

[17] Godin M, Moulin B, Etienne I, Fillastre JP. Renal aging in man. Presse Med 1992;21(26):1246-1248.

[18] Astor BC, Muntner P, Levin A, et al. Association of kidney function and anemia: the Third National Health and Nutrition Examination survey (1988- 1994). Arch.Intern Med 2002; 162: 1401- 1408.

[19] Sweileh WM; Potential adverse effects of a low dose aspirin-diuretic combination on kidney function. Int J Clin Pharmacol Ther 2007;45(11):601-605

[20] Juhlin I, Jonsson Bo A.G, Hoglund P. Renal effects of aspirin are clearly dose-dependent and are of clinical importance from a dose of 160mg. European journal of Heart Failure 2008;10(9):892-898

[21] Davie A.P, Love M.P, McMurray J.J. Even low dose aspirin inhibits arachidonic acid-induced vasodilatation in heart failure. Clin Pharmacol Ther 2000; 67: 530-537.

[22] Juhlin T, Bjorkman S, Gunnarsson B, Fyge A, Roth B, Hoglund P. Acute administration of diclofenac, but possibly not long term low dose aspirin, causes detrimental effects in heart failure patients treated with ACE-inhibitors. European journal of Heart Failure 2004;6(7):909-916.