



Clinical and Metabolic Peculiarities Children and Teenagers with Arterial Hypertension

1. Zhalalova Dilduza Zukhriddinova

Received 25th Mar 2022,
Accepted 26th Apr 2022,
Online 25th May 2022

Annotation. From this article we studied the relationship between hypertensive retinopathy and hypertrophy of the left ventricle (LVH) at patients with chronic sickness kidney (CKD).

Keywords: hypertrophy, increase in blood pressure, defined as systolic, cardiovascular, metabolic pathology.

¹ Samarkand State Medical University

Introduction. Hypertensive retinopathy (HR) is a disease caused by a prolonged increase in blood pressure, defined as systolic, above 140 mm Hg. Art. and diastolic, above 90 mm Hg. Art., which leads to loss of vision [27]. The prevalence of GH among people with HD is high at 75.95% [27].

At gathering history was identified tall level family burdened on cardiovascular and metabolic pathology in the group of boys with AH. Hereditary history in 80% of adolescents was aggravated by hypertension (in 20% - on the father's side, in 28 - on the mother's side, in 32 - on the side of both parents), in 36% - for coronary artery disease, in 38 - for obesity, in 20 for type 2 diabetes.

When assessing the somatic health of boys with AH, attention was drawn to high representation among them children with excess weight body (17%) and obese (48%).

Diseases were also common comorbidities in the study group. ENT organs (at 42% children) - allergic and vasomotor rhinitis, hypertrophy of palatine tonsils, chronic tonsillitis, deviated septum. Pathology of the musculoskeletal system was diagnosed in 16% of cases and was represented by posture disorders, scoliosis, and flat feet.

eight% boys suffered diseases gastrointestinal tract, 6% – allergic diseases (Table 1).

Table 1 Distribution of patients by the presence of concomitant pathology

Related pathology	Quantity patients , people _ (%)
Excess weight body	thirteen (17)
Obesity	38 (48)

ENT organs	34 (42)
Musculoskeletal system	thirteen (sixteen)
gastrointestinal tract	6 (8)
Allergic diseases	5 (6)

The mean age of onset of hypertension in the group as a whole was in the early adolescence (12.9 ± 2.6 years). By the time of this hospitalization, the duration diseases at examined teenagers was from 0 before 6 years (1.9

± 1.5 years).

Features of the circadian organization of blood pressure in boys with hypertension are presented in Table. 2. According to the results of ABPM, 48% of patients had labile and 52% of patients had stable promotion level HELL in flow days. Isolated systolic hypertension was diagnosed in 76% and systolic-diastolic hypertension in 24% of boys.

Table 2 Features of the circadian organization of blood pressure in boys with hypertension

Parameter SMAD	Group boys with AG n =50
Wed SBP days , mm rt. Art.	137 \pm 9.5
Wed SAD n., mm rt. Art.	118.1 \pm 9.4
Wed DBP days , mm rt. Art.	74.6 \pm 5.7
Wed DBP n., mm rt. Art.	58.5 \pm 6.5
IVG GARDEN, %	47.8 \pm 23.7
IVG DAD, %	16.3 \pm 13.5
IVG GARDEN days , %	48.3 \pm 25.7
IVG GARDEN n., %	42 \pm 29.3
IVG DBP days , %	18.5 \pm 18.2
IVG DBP n., %	16.2 \pm 19.5
SI GARDEN, %	13.8 \pm 4.3

SI DAD, %	21.9 \pm 6.4
STOSAD days , mm. rt. Art.	12.4 \pm 2.1
StoSAD n., mm. rt. Art.	9.6 \pm 2.8
Hundred DBP days , mm. rt. Art.	10.5 \pm 1.9
STODAD n., mm. rt. Art.	7.4 \pm 2.3
HF GARDEN days , mm. rt. Art.	9 \pm 1.5
HF GARDEN n., mm. rt. Art.	8.2 \pm 2.4
HF DBP days , mm. rt. Art.	14.3 \pm 2.7
HF DBP n., mm. rt. Art.	12.8 \pm 3.3

When analyzing the parameters of BP variability in the examined children, we determined that only 25% of patients demonstrated a normal decrease in the level of BP from day to night (dipper type for SBP and DBP). Circadian disruption organizations GARDEN in form insufficient his decline in nocturnal time (non-dipper) was demonstrated by 19% of boys, an excessive decrease in SBP during night sleep (over-dipper type) was observed in 6% of children. Insufficient decrease in DBP at night was detected in 4% of the examined, excessive - in 64%.

The variability of the level of blood pressure, estimated on average for the group, did not exceed normal values. In a detailed analysis, it was found that the increased variability of SBP in the daytime, when assessed by standard deviation (StD) identified at eighteen% boys, at evaluation by coefficient variations (KV) - in 9%, at night - in 16 and 11%, respectively. Increased daytime DBP variability as assessed by STO was found in 34% of children, at night - in 9%, when assessed by CV - in 26 and 33%, respectively.

Results biochemical research serum blood presented in tab. 3.

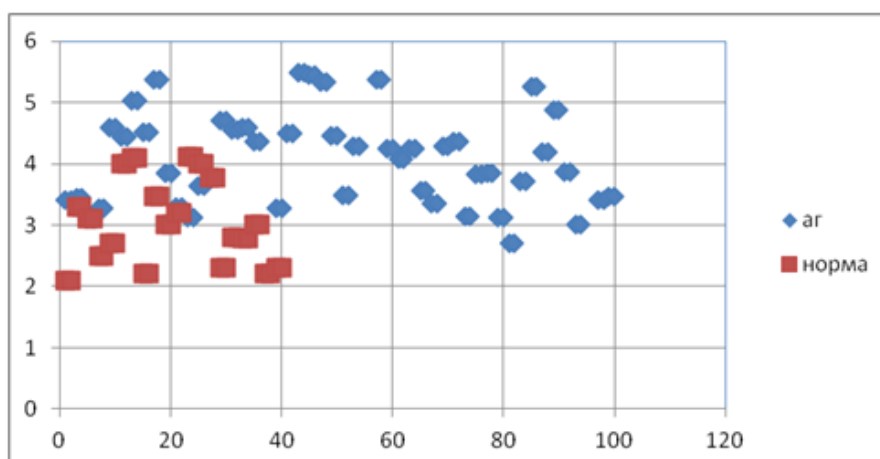
Table 3 Serum concentration electrolytes and some indicators of carbohydrate and lipid exchange at teenagers with EAG and in group control ($M \pm s$)

Indicator	The control n=18	Patients with EAH n=50	Manna Whitney , p
glucose , mmol /l	4.12±0.58	5.07±0.60	0.0000001
Urinary acid , μmol /l	240.66±23.93	370.17±77.16	0.0000001
Creatinine _ μmol /l	78.85±4.72	90.58±8.83	0.0000001
triglycerides , mmol /l	1.05±0.23	0.96±0.32	0.12
cholesterol , mmol /l	3.05±0.067	4.08±0.75	0.0000001
HDL, mmol /l	1.17±0.30	1.39±0.28	0.000007
LDL mmol /l	1.19±0.26	2.29±0.58	0.0000001
VLDL , mmol /l	0.27±0.04	0.44±0.15	0.0000001
TO, mmol /l	4.44±0.42	4.76±3.99	0.62
Na, mmol /l	144.16±3.84	143.29±2.29	0.11
Ca, mmol /l	2.38±0.13	2.25±0.10	0.0000001
mg, mmol /l	0.94±0.11	0.83±0.06	0.0000001
Cl, mmol /l	101.09±2.62	99.39±2.91	0.002

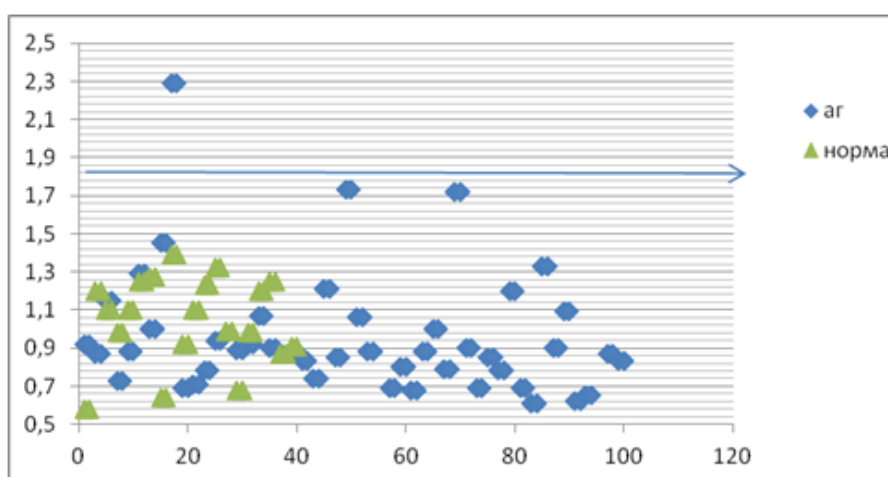
The study of the lipid profile of patients, which consists of the definition concentration triglycerides, cholesterol HDL, LDL VLDL in blood serum is important in assessing the state of the cardiovascular system and identifying risk factors for the development of atherosclerosis and acute vascular diseases.

From the data presented in table. 3, it can be seen that all the studied characteristics of the lipid spectrum significantly differed from those in healthy children, despite on the then, what in in general on group were in within reference

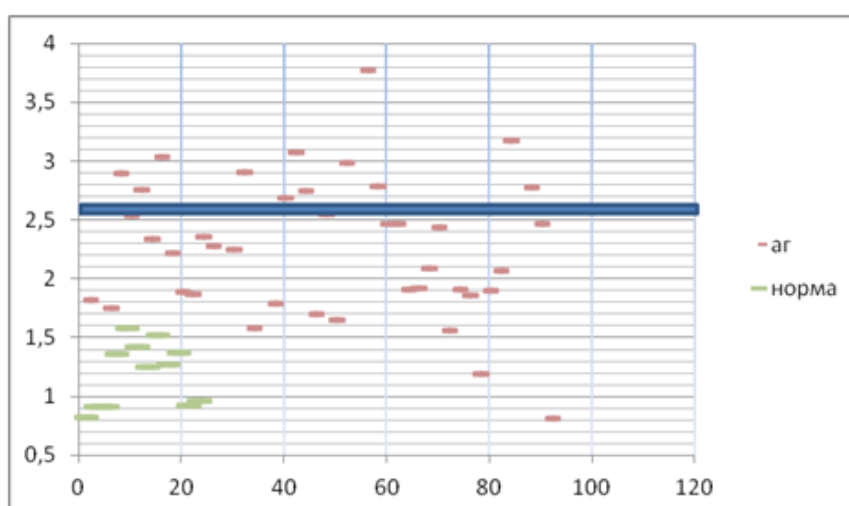
values (Figure 4-7). Dyslipidemias were diagnosed in 15.2% of children. Most frequent find It was isolated promotion in serum triglyceride levels (n=4). Two children showed a decrease in serum levels of HDL-C (isolated hypoalphacholesterolemia), in one teenager - an increase in LDL levels.



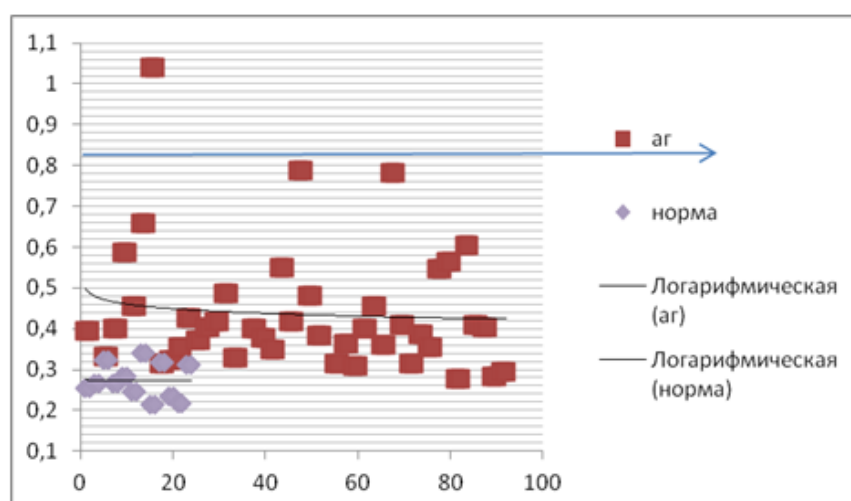
Picture 4. Schedule individual distribution level cholesterol



Picture 5. Schedule individual distribution level triglycerides



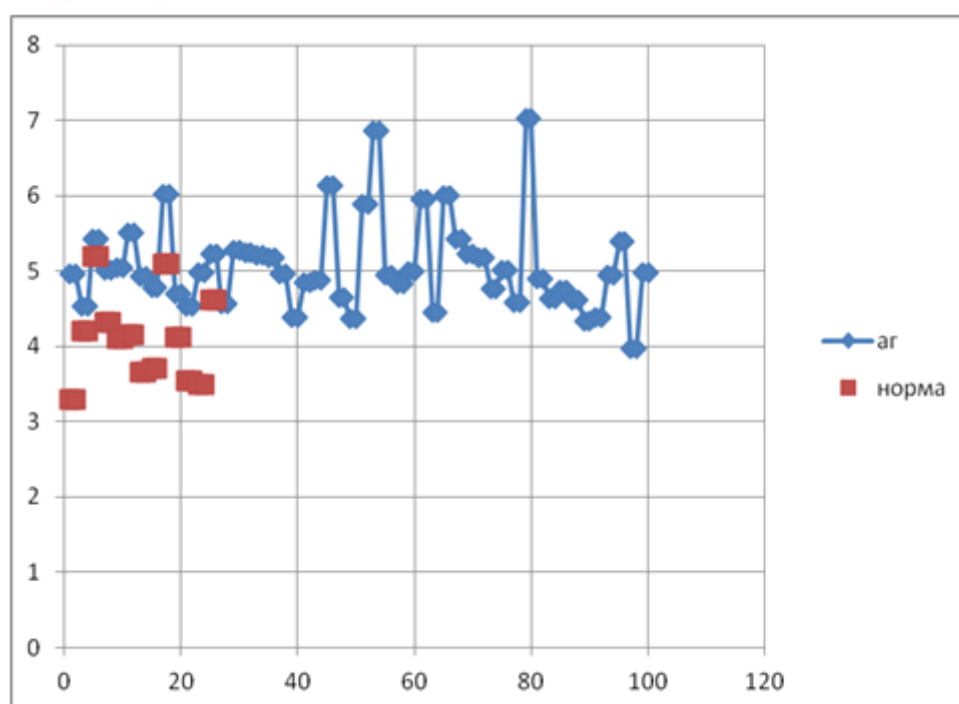
Picture 6. Schedule individual distribution LDL level



Picture 7. Schedule individual distribution level VLDL

Analysis level glucose in serum blood demonstrated Availability higher mean group values in patients with hypertension compared with healthy children and adolescents. As can be seen from the individual distribution plot (Fig. 8), fluctuations in sugar levels among hypertensive patients are from 4.5 before 7.0 mmol/l, and even lower border concentration glucose in all cases, except one, exceeds the blood sugar levels of healthy children.

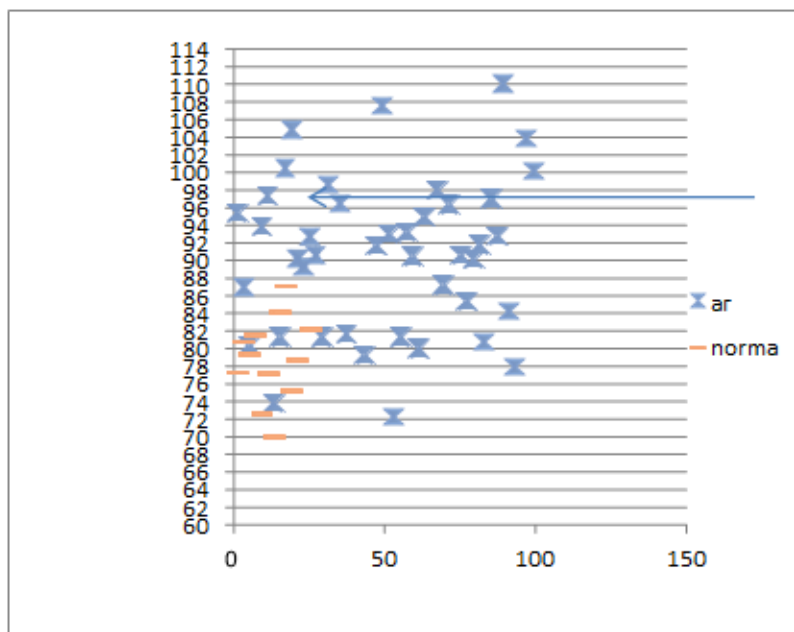
Violation glycemia on an empty stomach It was revealed at 12% boys with AG.



Picture 8. Schedule individual distribution level glucose

Serum creatinine level, despite its individually normal values, turned out to be one of the significant discrimination factors patients with hypertension and healthy teenagers (rice. nine). The fact maybe

reflect beginning already in so early age worsening renal functions, without organ manifestations of renal pathology due to arterial hypertension.



Picture 9. Schedule individual distribution creatinine

When analyzing the data (see Table 3), attention is drawn to significantly higher serum concentrations of uric acid in children and adolescents with hypertension, and even average group values exceed top border norms for a given age [100]. The significance of hyperuricemia as an independent cardiometabolic risk factor remains the subject of discussion to date. However, previously published studies have convincingly shown that elevated serum urate levels are common in adolescent boys with hypertension and are associated with cardiometabolic risk factors such as obesity and hypertriglyceridemia, leading to the conclusion that hyperuricemia in a cohort of adolescent males with hypertension is a marker of high cardiometabolic risk [92].

Thus, the study group of children with AH as a whole is characterized by a high prevalence of associated cardiometabolic risk factors: obesity and overweight (65%), dyslipidemia (15.2%), impaired on an empty stomach glycemia (12%). And in 60% cases was marked clustering these factors what much raises risk of cardiovascular and metabolic pathology in further ontogenesis.

Literature:

1. Doliev, M. N., Tulakova, G. E., Kadyrova, A. M., Yusupov, Z. A., & Zhalalova, D. Z. effectiveness of combined treatment of patients with central serous chorioretinopathy // Bulletin of the Bashkir State Medical University, (2016). (2), 64-66.
2. Zhalalova, D.Z. Method of combined treatment of diabetic retinopathy // Postgraduate doctor, (2009). 37(10), 864-868.
3. Zhalalova D.Z. Multicomponent approach to the diagnosis of retinal changes in arterial hypertension // Biology and problem of medicine, (2021) No. 5 (130), 205-211

4. Zhalalova D.Z. OCT angiography in the assessment of retinal and choroiretinal microcirculation in patients with uncomplicated arterial hypertension / I International Ophthalmological Congress IOC Uzbekistan, 2021, Tashkent, p. 96
5. Zhalalova D.Z. OCT angiography in assessing the vascular bed of the retina and choroid // Biology and problem of medicine , (2021) No. 6 (130), 211-216
6. Zhalalova D.Z. Classification criteria for changes in retinal vessels in arterial hypertension / International scientific conference University science: a look into the future, (2022) , Kursk, 56-64
7. Babaev, S. A., Kadirova, A. M., Yusupov, A. A., Bekturdiyev, Sh. S., & Sabirova, D. B. Our experience of surgical correction of secondary divergent strabismus in children // Viewpoint . East-West, (3), (2016). 124-126.
8. Babaev, S.A., Kadirova, A.M., Sadullaev, A.B., Bekturdiyev, Sh.S., Salakhiddinova, F.O., & Khamrakov, S.B. lenses for mature senile cataracts // Bulletin of the doctor, (2017). (3), 23.
9. Boboev, S. A., Kadirova, A. M., Ismoilov, Zh. In VOLGAMEDSCIENCE (2021). (pp. 430-432).
10. Doliev, M. N., Tulakova, G. E., Kadyrova, A. M., Yusupov, Z. A., & Zhalalova, D. Z. EFFECTIVENESS OF COMBINED TREATMENT OF PATIENTS WITH CENTRAL SEROUS CHORIORETINOPATHY // Bulletin of the Bashkir State Medical University, (2016). (2), 64-66.
11. Zhalalova, D. Z., Kadirova, A. M., & Khamrakov, S. B. OUTCOMES OF HERPATIC KERATOUEITIS IN THE BACKGROUND OF TREATMENT WITH OPHTHALMOFERON, DEPENDING ON THE IMMUNE STATUS OF PATIENTS // INTERDISCIPLINARY APPROACH TO DISEASES OF THE HEAD AND NECK. (2021). 103.
12. Zhalalova, D. Z. The method of combined treatment of diabetic retinopathy // Doctor-graduate student, (2009). 37(10), 864-868.
13. Kadirova, A. M., Boboev, S. A., & Khakimova, M. Sh. EARLY DETECTION AND TREATMENT OF ACCOMMODATION SPASM IN CHILDREN // Forum of Young Scientists, (2021) (5), 191-196.
14. Kadirova, A. M., Boboev, S. A., & Khamrakov, S. B. (2021). EFFICACY OF RETINALAMIN IN THE TREATMENT OF CONGENITAL MYOPIA. In VOLGAMEDSCIENCE (pp. 429-430).
15. Kadirova, A. M., Ruziev, T. Kh., & Khamrakov, S. B. (2019). LONG-TERM RESULTS OF AUTOPLASTY WITH A CONJUNCTIVE FLAP IN PATIENTS WITH PURTOLD HYMA. VOLUME-I, 235.
16. Kodirova A.M., Babaev S.A., Kalandarov F.U., Gaffarov G.K. The effectiveness of dacryocystorhinostomy by bichannel intubation of the lacrimal cavity with silicone tubular tracts // "On the way of scientific discoveries". Materials of the scientific and practical conference of young scientists, April 9, Tashkent highway, 2013, p. 231.
17. Kadirova A. M., Khamrakov S. B., Khakimova M. Sh. TREATMENT OF ACCOMMODATION SPASM IN CHILDREN // MODERN SCIENCE: CURRENT ISSUES AND PROSPECTS OF DEVELOPMENT. - 2021. - S. 231-236.
18. Mukhamadiev, R. O., Dekhkanov, T. D., Blinova, S. A., Yusupov, A. A., & Khamidova, F. M. Age-related features of tear crystallization in healthy individuals. Vestnik Vrach,

19. Sabirova, D. B., Yusupov, A. A., Iskandarov, Sh. Kh., Kadyrova, A. M., & Tulakova, G. E. Clinical evaluation of ozone therapy and cryopexy in patients with herpetic keratitis // Tochka vision. East-West, (2016). (1), 147-149.
20. Sabirova, D. B., Tulakova, G. E., & Ergasheva, D. S. Complex treatment of diabetic maculopathy by using the peptide bioregulator "Retinalamin" and laser coagulation of the retina // Point of view. East-West, (2017). (2), 114-116.
21. Sabirova, D. B., Iskandarov, Sh. Kh., Kosimov, R. E., Ergasheva, D. S., & Yusupov, A. A. Improving the treatment of herpetic keratitis using ozone in the form of gas through the glasses of the apparatus "Orion-si" // Russian National Ophthalmological Forum, (2015). 1, 159-163.
22. Zukhriddinova, Z. D. (2022). Development of Classification Criteria for Neuroretinal Ischemia in Arterial Hypertension. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(3), 59-65. <https://doi.org/10.17605/OSF.IO/K76ZT>
23. Z., Z. D., & K., M. D. (2022). Magnetic Resonance Tractography as a Method of Choice for Neuroimaging in Ocular Ischemic Syndrome against the Background of Hypertension. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(2), 207-210. <https://doi.org/10.17605/OSF.IO/E2AH9>
24. Zukhriddinova, Z. D. (2022). Development of Classification Criteria for Neuroretinal Ischemia in Arterial Hypertension. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(3), 59-65. <https://doi.org/10.17605/OSF.IO/K76ZT>
25. Z., Z. D. (2022). Rehabilitation and Treatment Algorithm for Patients with Ocular Ischemic Syndrome on the Background of Arterial Hypertension. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 3(2), 211-213. <https://doi.org/10.17605/OSF.IO/SYA5K>
26. Babayev, S. A., Bekturdiyev, S. S., Rakhimov, N. M., Jalalova, D. Z., Yusupova, D. Z., & Shakhanova, S. S. (2021). ASSESSMENT OF THE STATE OF IMMUNITY IN PATIENTS WITH TUMORS. CENTRAL ASIAN JOURNAL OF MEDICAL AND NATURAL SCIENCES, 2(3), 218-225. <https://doi.org/10.47494/cajmns.v2i3.204>