in two groups: 1-st gr. (n=39) – pts with only EH, 2-nd gr. (n=15) – pts with comorbidity (EH + diabetes). The frequency of development MD in our research consisted 27.8%.

Results: Results. At the basing examine groups were same by age, gender, hemodynamics parameters and the structural data of the EhoCG. But initial body mass index (BMI) (kg/m2) were more higher (p<0.013) in pts of 2-nd gr. (30.41±0.44) than in pts of 1-st gr. (27.94±0.44) and glycaemia – (p<0.002) in pts of 2-nd gr. - 5.93±0.35 mmol/l and 4.61±0.15 mmol/l in pts of 1-st gr.

The results of re-examination (in 15-20 years) demonstrated reliable increase indicators between the 1-st and the 2-nd groups of BMI (0.21±0.06 and 0.47±0.11, p<0.05), hemodynamics parameters: systolic blood pressure (BP) (-0.97±0.86 and 33.46±5.43, p<0.0001), diastolic BP (-6.23±2.67 and 6.77±3.00, p<0.027), and pulse BP (5.26±2.33 and 26.69±4.87, p<0.0001).

Conclusions: Conclusion. The results of this study showed that the following risk factors: the presence of initial obesity (BMI = 30.41 ± 0.44 kg/m2) with increasing normal blood glucose (5.93 ± 0.35 mmol/l), uncontrolled arterial (systolic, diastolic and pulse) hypertension associated with the risk of development of diabetes mellitus in patients with EH during a long period of time (in 15-20 years).

SURVEY OF ACCESSIBILITY, AVAILABILITY, PRICE AND AFFORDABILITY OF ESSENTIAL MEDICINES AND DIAGNOSTIC TECHNOLOGIES FOR THE CLINICAL MEASURE AND TREATMENT OF HYPERTENSION ON PRIMARY

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Objective: To assess the accessibility, availability and affordability of essential drugs and diagnostic technologies for the clinical measure and treatment of hypertension on primary health care unit of West Gojjam, Ethiopia 2020

Design and method: Facility-based cross-sectional survey was conducted from march16/2020-march30/2020 at 40 primary health care unit drug outlets of west Gojjam. Data was collected with an interviewer administered structured data collection tool and analyzed using SPSS version 23 ad Microsoft excel 2016. Medicines prices was compared with facilities and sectors. The daily wage of the lowest paid government worker was used to measure affordability.

Results: The mean availability of essential drugs and diagnostic technologies at the primary health care units of west Gojjam was 62.5% and 67.5% respectively. The number of days wage needed for getting essential antihypertensive medications was two or more working days. All the available essential antihypertensive medications was in generic brands and not affordable for one month course of treatment.

Conclusions: Essential anti-hypertensive medications and diagnostic medical technologies for the clinical measure and treatment of hypertension are available at fairly high, but unaffordable for the wage of unskilled government worker, and for money peoples living under the poverty line of the country. The national NCD prevention program should give an emphasis on improvement of access to affordable essential anti-hypertensive medications and diagnostic technologies for the diagnosis and treatment of hypertension at primary health care units.

ADHERENCE AND ASSOCIATED FACTORS OF ANTIHYPERTENSIVE DRUGS AMONG ADULT HYPERTENSIVE PATIENTS AT CHRONIC FOLLOW UP CLINICS OF WEST GOJAM ZONE, NORTH-WEST ETHIOPIA 2020

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Objective: To assess the adherence and associated factors of anti hypertensive medications among adult hypertensive patients at chronic follow up clinics of West Gojjam, North West Ethiopia.

Design and method: Institutional based cross-sectional study was conducted in chronic follow up clinics of randomly selected hospitals from June 1/2020-June 15/2020. Systematic Random sampling technique used to select participants and prestted structured questioner with observation of medical charts, and the MMAS-8 tool was used to assess the adherence status. Data entered to Epi-Info version-7.3 and analyzed by SPSS version-25. Variables with P-value < 0.25 in bi-variate logistic regression analysis entered to multivariate logistic regression. P-value < 0.05 used to determine the statistical association.

Results: Among five hundred forty one participated hypertensive patients, 60.6% participants were male and the mean age of the participants was 54.39 and SD of ±11.4. The adherence level of the participants was 61.4% (95%CI=0.573-0.655). Factors like, abused by alcohol (AOR=2.123, 95%CI=0.072-0.632), rural residency (AOR=0.423, 95%CI=(0.224-0.708), forgetful of taking the medication(AOR=0.116-95%CI=0.063-0.213), poor knowledge about treatment and control of hypertension (AOR=0.191, 95%CI=0.085-0.43), and thinking ADHD as non-useful (AOR=0.537, 95%CI=0.309-0.936) were inversely associated with adherence.

Conclusions: Only 61.4% of the participants found adherent, which is below the WHO standards. Adherence to anti hypertensive medications affected by the residency, knowledge status, forgetfulness, attitude towards the medications, and alcohol abuse. Adherence counseling and patient education about hypertension and its treatment is important to improve adherence status of patients.

DIETARY FIBRE REDUCES INTESTINAL PH AND EXHIBITS CARDIOVASCULAR-PROTECTIVE EFFECTS THROUGH A PROTON-SENSING RECEPTOR

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Objective: Dietary fibre lowers blood pressure (BP) and risk of cardiovascular disease and death via production of acidic metabolites by the gut microbiota. The mechanisms involved, however, are still elusive. Here, we aimed to understand the role of intestinal pH and the proton-sensing receptor GPR65 in the cardiovascular protection by dietary fibre.

Design and method: Intestinal pH of C57BL/6 (WT) mice was measured after a 7-day dietary intervention with different levels of dietary fibre. The impact of pH and GPR65 on production of an inflammatory cytokine, TNFα, was determined by flow cytometry. We also determined the cardiovascular phenotype of male and female naïve WT and Gpr65-/- mice, including BP, tissue weights, sodium handling and immune cell infiltration.

Results: Compared to the control diet, high fibre diet significantly reduced pH in caecum (control 6.84±0.12 vs high fibre 6.03±0.07, P=0.001) and colon (7.10±0.12 vs 5.95±0.12, P=0.001), while a diet lacking fibre significantly elevated pH (caecum, 7.37±0.05, P=0.001; colon, 7.53±0.07, P=0.030). Acidic pH inhibited the production of the proinflammatory TNFα by both CD4+ and CD8+ T cells (high pH 6 vs pH 7; P=0.001). Deletion of GPR65 increased TNFα production, particularly at acidic pH (CD4+, P=0.002; CD8+, P=0.001). Compared to WT controls, male and female Gpr65-/- mice had higher BP (mean arterial pressure; males WT 76.57±3.26 vs Gpr65-/- 87.69±2.18, P=0.013; females WT 73.40±2.41 vs Gpr65-/- 82.27±2.56, P=0.018; mmHg), and significant cardiac (Males, P<0.001; Females, P=0.001), renal (Males, P=0.003; Females, P=0.003) and splenic (Males, P=0.002; Females, P=0.002) hypertrophy when adjusted to tibia length. Male Gpr65-/- mice exhibited compromised capability in handling sodium (P<0.001) and water (P=0.028). Furthermore, male Gpr65-/- mice had increased infiltrations of CD4+ T cells (P=0.015) and gamma-delta T cells (P=0.038) in the kidneys, suggesting an increased susceptibility to renal inflammation.

Conclusions: We determined that dietary fibre reduces large intestine pH. Low pH inhibits TNFα production in a partially GPR65-dependent way. Gpr65-/- mice exhibited spontaneous cardiovascular disorders including higher BP. This supports that the cardiovascular protection by dietary fibre is likely to be through pH regulation and GPR65. This is a highly novel mechanism that regulates BP.

THE PROTECTIVE EFFECT AND MECHANISM OF HSP47 IN HYPERTENSIVE INTRACEREBRAL HEMORRHAGE

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Objective: Hypertensive intracerebral hemorrhage (ICH) has a high mortality rate, but there is no effective treatment, so how to prevent it has become a top priority. Heat shock protein 47 (HSP47) is a molecular chaperone for collagen synthesis and is responsible for transporting procollagen from the endoplasmic reticulum to the golgi lumen, effectively maintaining the three-dimensional structure of collagen. Absence of HSP47 may affect collagen synthesis and the stability of extracellular matrix (ECM), further damaging the stability of blood vessels. Therefore, we aimed to explore the role of HSP47 in ICH.

Design and method: Spontaneous hypertensive ICH of mice were induced by angiotensin II and L-NAME. We found that the level of HSP47 gradually decreased with the increase of modelling days. The adeno-associated virus was delivered into brain by stereotactic injection to overexpress HSP47.

Results: The incidence of ICH were decreased significantly in mice by HSP47 overexpression. At the same time, the number and size of ICH in mice were significantly reduced. Experimental results show that HSP47 overexpression was sufficient to enhance ECM integrity and reduce VSMC apoptosis before ICH.