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Background and Aims: To study the state of the magistral arteries in relation to the level of leptin and adiponectin in patients with chronic heart failure (CHF) and overweight or obesity.

Methods: 116 patients with CHF I-III functional class age from 45 to 65 years old were divided into three comparable groups depending on body mass index (BMI). A physical examination was performed and the pulse wave velocity was estimated. Laboratory markers of obesity – serum levels of leptin and adiponectin - were determined.

Results: Pulse wave velocity in elastic vessels in the 3-rd group of patients with "isolated" CHF (p < 0.05). The percentage of occurrence of PWV > 10 m/s was significantly higher in patients of groups 2 and 3 compared with patients of group 1 (73% and 82% vs 44%, respectively). PWV in muscle-type vessels was 10.9 [7.7; 11.2] m/s and 8.3 [7.2; 10.9] m/s, respectively (p < 0.05). There was a statistically significant increase in the concentration of leptin, as well as a decrease in the concentration of adiponectin from group 1 to group 3. The presence of reliable relationships between the parameters of stiffness of the main arteries and laboratory markers of obesity was established.

Conclusions: The negative effect of hyperleptinemia and hypo-adiponectinemia on the vascular elasticity of the main arteries in patients with CHF with overweight or obesity was established.

P729 / #1272, E-POSTERS TOPIC: 4. CLINICAL VASCULAR DISEASE / 4.12 PREVENTION AND TREATMENT OF CARDIOVASCULAR DISEASE: MISCELLANEOUS.

FRACTIONAL FLOW RESERVE: COMPARING INTRAVENOUS REGADENOSON AND INTRAVENOUS ADENOSINE

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Background and Aims: Creating an environment of maximal hyperemia is required for adequate fractional flow reserve (FFR) measurements and ultimately an effective percutaneous intervention. Currently the gold standard method is via intravenous adenosine, but it has side effects through its non-selective activation of adenosine receptors. Intravenous regadenoson has been proposed as a safe alternative, but a recent trial used regadenoson with aminophylline. The goal of this meta-analysis is to compare the previous four studies with this newly designed trial.

Methods: We conducted a meta-analysis of all randomized controlled trials as of January 2021 that measured the FFR in patients who received intravenous regadenoson and intravenous adenosine. The primary outcome was mean FFR difference.

Results: Five randomized clinical trials were included with a total of 248 patients. Heterogeneity was low across the trials (0%). The primary outcome of mean FFR measurements showed no statistical difference between intravenous regadenoson and intracoronary adenosine.

Conclusions: This meta-analysis reveals that intravenous administration of regadenoson with aminophylline and intravenous adenosine has similar effects on FFR. Further larger trials with longer follow up durations are needed to confirm these results along with trials comparing intravenous regadenoson with and without aminophylline versus other alternatives, such as intracoronary adenosine and intracoronary nitroprusside. Additionally, these studies should evaluate and compare the side effect profile with these options.

P730 / #1393, E-POSTERS TOPIC: 4. CLINICAL VASCULAR DISEASE / 4.12 PREVENTION AND TREATMENT OF CARDIOVASCULAR DISEASE: MISCELLANEOUS.

ULTRASOUND-GUIDED LASER-MEDIATED THERMAL ANGIOPLASTY OF OCCLUDED ARTERY ACCOMPANIED BY COMBINED PACLITAXEL THERAPY AND CATHETER-BASED 192Ir-MEDIATED β-BRACHYTHERAPY

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Background and Aims: The laser atherectomy methods that are currently in use, cause to inflammation and subsequent restenosis. The aim of this study was to evaluate the effect of combined paclitaxel therapy and catheter-based 192Ir-mediated β brachytherapy on inflammation and neointima reduction after laser angioplasty of the animal occluded femoral artery, wherein diagnostic ultrasound is adjunction with laser angioplasty system and combination therapy system, with a goal of increased safety.

Methods: Briefly, New Zealand white rabbits were submitted to femoral artery advanced atherosclerotic occlusion by primary perivascular severe cold injury followed by a 2% cholesterol- rich diet for fourteen weeks. Histopathology results showed the formation of stable advanced atherosclerosis with lipid and neovessel - rich plaque, resulted in occlusion in all of the rabbits’ arteries. Then treatment group underwent B- mode ultrasound-guided argon laser (488 nm) angioplasty followed by catheter-based β brachytherapy (192Ir, 15 Gy) in combination with paclitaxel (10mg/Kg) administration.

Results: From ultrasonography and histopathology showed a significant reduction in the mean value for immune cells and smooth muscle hyperplasia cells density after angioplasty in the treatment group compared with the other groups (p < 0.05).

Conclusions: Apoptotic effect of catheter-based 192Ir-mediated β brachytherapy in combination with toxicity effect of paclitaxel, can cause to reduce the density of macrophage cells and smooth muscle hyperplasia cells in the intimal layer. These findings provide the basis for developing combined β brachytherapy and paclitaxel therapy for a successful clinical application in the treatment of neointima reduction after laser angioplasty.

P731 / #1404, E-POSTERS TOPIC: 4. CLINICAL VASCULAR DISEASE / 4.12 PREVENTION AND TREATMENT OF CARDIOVASCULAR DISEASE: MISCELLANEOUS.

PRESENTATION OF SARS-COV-2 (COVID-19) IN PATIENTS WITH CONGESTIVE HEART FAILURE: A RETROSPECTIVE STUDY

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Background and Aims: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the causative agent of COVID-19, has infected 86,468,659 people around the globe until 6/1/2021, with 1,869,808 mortalities. It is estimated that people with congestive heart failure (CHF) are in a high risk group. SARS-CoV-2 (COVID-19) has infected 200,000 people in Saudi Arabia and the region of Hail, where morbidity obesity is at 33.6% of the population. Our aim is to establish an epidemiological link for our population between diabetes, obesity and percentage of intubated patients as we measured mortalities and readmissions in 30 days.

Methods: A retrospective cohort study of 751 patients admitted as positive COVID 19 patients, from April 1, 2020 to July 31, 2020, covering a period of 4 months. We then categorised the patient in cohorts according to the existence of CHF or not, and categorised them according to their BMI index. We then correlated using statistical tool analysis - SPSS statistics tool - intubation, mortality, readmission in 30 days in the groups of patients

Results: Around 12% of our cases were CHF. 16% of these cases intubated, instead of 5% of non CHF cases. Mortalities were higher in the CHF group as percentage (72% to 7%), and readmissions. Significant correlation between BMI and days of ICU stay in the CHF group

Conclusions: There is significantly elevated morbidity and mortality at obese CHF cases with COVID 19