

Methods: All patients admitted with STEMI between 2006 and March 2022 to a large German PCI center entered analysis. Patients were assigned to the study group with severe obesity (BMI \geq 40 kg/m²), a control group (obesity grade 2 (BMI 35-39.9 kg/m²)) and a second control group (BMI \leq 35 kg/m²).

Results: From a total of 11740 patient included, 269 patients (2.3%) presented with severe obesity with a mean weight of 128.9 \pm 18 kg, while 589 patients (5.0%) had obesity grade 2. Patients with severe obesity were on average 6.4 years younger compared to patients with a BMI \leq 35 kg/m²: 57.7 \pm 11.5 vs. 64.1 \pm 13.1, p<0.01). Rates of severe obesity were higher in women in most age strata, especially in the young: women 9.3%, men 3.0%, p<0.01. Over time the proportion of severe obesity increased from 1.9% in 2006-2013 to 2.9% in 2014-2022, p<0.01. This increase was again more pronounced in women 2.5% to 3.9% (p=0.02) vs. men: 1.7% to 2.5% (p<0.01) and most prominent in young STEMI-patients: 2.3% to 6.2%, p<0.01. The increasing prevalence of severe obesity over time could be confirmed in multivariate model, however only for the young (Table). While there was no association between severe obesity and hyperlipidemia (LDL-cholesterol 120.9 \pm 44 mg/dl in severe obesity vs. 121.5 \pm 57 mg/dl in controls, p=0.91), it was associated with higher rates of diabetes mellitus (45.5% vs. 18.8%, p<0.01). Patients with severe obesity showed similar rates of multivessel disease (61.6% vs. 63.5%, p=0.51) and successful primary percutaneous coronary intervention (TIMI 2/3 post PCI: 96.2% vs. 95.1%, p=0.44). In an adjusted analysis severe obesity was associated with similar in-hospital-mortality-rates (OR 0.98, 95% CI 0.6-1.6, p=0.94), however in long term follow up a trend for a higher 1-year-mortality (OR 1.49, 95% CI 0.98-2.2, p=0.065) and a significantly higher 5-year-mortality (OR 1.82, 95% CI 1.17-1.82, p<0.01) could be observed.

Table: Comparison of prevalence rates of severe obesity in STEMI-Patients 2014-2022 compared to 2006-2013

		OR	95% CI	p
<55 yrs. of age	Men	2.27	1.2-4.4	0.016
	Women	3.42	1.3-9.2	<0.01
\geq 55 yrs. of age	Men	1.28	0.7-2.3	0.5
	Women	1.31	0.6-2.9	0.5

Conclusions: These results from a large registry study reveal, that during the last 16 years rates of severe obesity in patients with ST-elevation-myocardial infarctions increased by more than 50%. The increase was most prominent in women and the young, where rates more than doubled. At the same time, severe obesity was associated with a young age during the index event and a worse long-term-outcome. If rates of severe obesity in the general population continue to increase, then more acute myocardial infarctions especially in the young and in women are to be expected in the near future.

Apelin-13 Concentration in Patients With Essential Hypertension, Extrasystole and Obesity

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Abstract

Introduction: Today metabolic markers of cardiovascular risk are being actively studied. One of them is apelin-13.

Objective: To assess the concentration of apelin-13 in patients with hypertension and extrasystole depending on obesity.

Materials and Methods: 156 patients with stage II essential hypertension were examined. 124 of them had frequent extrasystoles (main group), 32 patients had no arrhythmias (comparison group). All patients underwent a clinical, instrumental examination and the assessment of apelin-13 concentration.

Results: In the main group of patients, the mean value of body mass index (BMI) was 31.40 \pm 0.43 kg/m² compared with BMI in the comparison group 30.21 \pm 0.93 kg/m² (p = 0.046). In the group of patients without extrasystoles normal weight occurs significantly more than in the main group (25.0% vs. 6.5%, p = 0.002). The higher rate of the abdominal obesity (60.5% vs. 37.5%, p = 0.02) was observed in main group. The average content of apelin-13 was significantly (p = 0.02) lower in patients with extrasystole than in those without arrhythmia. In patients with hypertension and obesity, the concentration of apelin-13 did not show a significant difference relative to the concentration of apelin-13 in patients with hypertension without obesity (p = 0.65).

Conclusion: Obesity is most common in patients with hypertension and arrhythmias, compared to patients without arrhythmias. In patients with hypertension, extrasystole and obesity, the average content of apelin-13 did not show a significant difference relative to the concentration of apelin-13 in patients without obesity which needs further study.

Expression of p27Kip1 in Obesity, Type 2 Diabetes and Caloric Restriction

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Abstract

Introduction: It is well established now that (1) the risks of various types of cancer are significantly higher in obesity and/or type 2 diabetes. It is also well established now that (2) the risks of various types of cancer are significantly lower in caloric restriction. The underlying molecular biological processes, however, appear to be very confusing. We now propose that the p27Kip1, a specific cell cycle repressor protein, appears to provide a consistent molecular biological mechanism of the risks of various types of cancer in obesity, type 2 diabetes, or caloric restriction.

Expression of p27Kip1 in small cases

p27Kip1 is a cell cycle repressor protein expressed primarily in the late G1 phase of the cell cycle. Subsequent *in vivo* physiological studies and *in vitro* biochemical studies indicated that the expression of p27Kip1 is significantly decreased in obesity and/or type 2 diabetes. This suggested that the flood gate between G1 and S phase is open, the cell cycle goes faster, DNA replication increases in S phase and cell division increases in M phase. In contrast to obesity and/or type 2 diabetes, expression of p27Kip1 is significantly increased in caloric restriction. This suggested that the flood gate between G1 and S phase is closed, the cell cycle goes slower, DNA replication decreases in S phase and cell division decreases in M phase. Please note that these types of change in the expression of p27Kin1 were never observed with any other cell cycle regulatory proteins.

Molecular biological mechanism of the expression of p27Kip1 mRNA

Examinations of the primary RNA sequence of the p27Kip1 mRNA revealed the existence of a very unusual RNA sequence. This sequence spans from 5'-upstream negative position of 575 to negative position of 1. This sequence regulates the level of expression of p27Kip1 protein.

Young Researchers Presentation

Feasibility of Concomitant Transoral Incisionless Fundoplication (cTIF) Procedure for Morbidly Obese Patients (BMI \geq 35 kg/m²)

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Abstract

Introduction: Gastroesophageal reflux disease (GERD) is a chronic disorder strongly associated with excess body weight. Concomitant transoral incisionless fundoplication (cTIF) combines hiatal hernia (HH) repair followed by EGD and TIF procedures. For patients obese or greater on the body mass index (BMI) scale, providers are more averse to performing cTIF due to lower likelihood of efficacy and positive outcomes.

Methods: This study includes 8 Morbidly Obese (BMI \geq 35) patients out of 133 patients (average = 59.74 years) with GERD and HH who underwent cTIF procedure from January 2019-July 2022 at a single hospital. 6 have HH sizes \geq 3 cm. Assessment is based on pre-/post-operative GERD/ROARS Questionnaires, reported relevant symptoms, and recurrent HH. Morbidly Obese patients have an average BMI of 36.89 kg/m² and average age of 54.63 years (range: 26 – 69).