

INDICATORS OF IMMUNOREACTIVITY IN CHRONIC HEART FAILURE OF ETIOLOGIES

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SUMMARY

Inveterate heart disappointment – side effect complex emerging within the result of cardiovascular illnesses of different etiologies. At the minute heart disappointment is broad and has gotten to be a widespread. This fact led to the ought to clarify the known components of pathogenesis and the rummage around for other ways of diagnostics treatment and eventually to move forward strategies of observing the course of heart disappointment. The wide symptomatic conceivable outcomes of present day medication did not give a clear understanding of the instruments of inclusion of the safe framework joins within the pathogenesis of unremitting heart disappointment. It remains an open address, concluded within the “cytokine theory” of the pathogenesis of incessant heart disappointment, approximately the cause-and-effect relationship of the resistant reaction and heart disappointment.

Keywords: chronic heart failure, left ventricular ejection fraction, cytokines, tumor necrosis factor, a-interleukins

INTRODUCTION:

Agreeing to the European rules for the conclusion and treatment of intense and incessant heart disappointment in 2020, heart disappointment (HF) could be a clinical disorder showed by the taking after characteristic side effects (shortness of breath, paroxysmal night dyspnea, orthopnea, diminished work out resistance, expanded recuperation time after work out, lower leg swelling, weariness), which may be accompanied by the taking after signs (expanded weight within the jugular veins, hepatogular reflux, third tone of the heart, uprooting of the apical pushed to the cleared out), caused by auxiliary and/or utilitarian changes of the heart, driving to a diminish in heart work and or an increment in intracardiac weight at rest or amid work out. Constant heart disappointment (CHF) creates as a result of numerous maladies of the cardiovascular framework of both fiery and non-inflammatory etiology, within the endless lion's share of cases leads to incapacity of patients with misfortune of their social role, a noteworthy weakening within the quality of life and, eventually, to a noteworthy decrease in life anticipation [1]. Concurring to surmised calculations, approximately 1-2% grown ups in created nations have HF, with an expanded chance of creating over 10% among the populace over the age of 70 .

When surveying sex contrasts within the frequency of HF over the age of 55, the hazard of improvement is 34% and 30% for men and ladies, respectively. For a long time, the subject of various considers has been the instruments of systolic myocardial brokenness, which has customarily been related with the seriousness of CHF. Some time recently the side effects ended up clear, the understanding may be watched with auxiliary or utilitarian cardiac anomalies (systolic or diastolic brokenness of the cleared out ventricle (LV)), which are antecedents of HF. Start of HF treatment at the organize of the pre-symptomatic course permits to make strides the forecast of the illness and can altogether diminish mortality within the nearness of asymptomatic systolic brokenness of the cleared out ventricle within the persistent. In recent decades, there has been an increment within the number of patients with side effects of HF within the nonattendance or nearness of negligible cardiac brokenness, which makes it fundamental to explore the part of diastolic dysfunction left ventricle amid and guess of HF.

MATERIAL AND METHODS

Agreeing to a few thinks about, the nearness of minimal diastolic brokenness can lead to an 8-fold increment within the hazard of mortality. A wide run of patients with HF shifts from those with a typical cleared out ventricular launch division (LVEF) (more often than not considered $\geq 50\%$; LVEF) to patients with diminished LVEF (less than 40%, LVEF). Patients with PV within the run of 40-49% are within the so-called "gray zone", which is presently assigned as CH-srFV. The investigation of populace studies indicates that the reality that the predominance of CHF with sFV within the world is from 40 to 70% (on normal 54%)[2].

Among individuals over 65 a long time of age with recently analyzed shortness of breath amid exercise, one in six will have unrecognized HF (basically CH-sFV). Specialists anticipate that the problem of treating patients with CHF will ended up one of the foremost imperative issues of cardiology within the coming decades. In spite of the over, talks proceed around the require for treatment of asymptomatic or low-symptomatic LV brokenness with protected LVEF. The significance of fathoming this issue is emphasized by the the truth that the number of such patients is at slightest five times higher than the number of detailed cases of HF.

At the same time, the forms of arrangement of the pathophysiological components of CHF stay not completely caught on. The part of actuation of the cytokine framework is recognized as one of the ways of arrangement of the obsessive handle. It is still not clear what part the systemic inflammatory reaction plays in hemocirculation clutters, as well as within the arrangement of endocardial and myocardial brokenness. In expansion, a coordinate relationship was uncovered in increasing the expression of cytokine levels within the nearness of LV brokenness[3]. The significance of systemic irritation within the pathogenesis of CHF is being effectively explored at the show time. Special consideration is paid to the think about of the forms of acceptance of safe responses, as well as their components driving to remodeling of the heart.

The reason for the increment within the substance of proinflammatory cytokines in CHF Adamopoulos and co-authors relate with the nonspecific enactment of macrophages and monocytes in blood plasma and interstitial liquid, happening in serious microcirculation disarranges, tissue hypoxia and abundance of free radicals that occur taking after myocardial harm and a drop in cardiac yield. There's a diverse point of see around the causes of safe enactment within the nearness of serious LV brokenness, which consists in interaction with resistant cells of endotoxins

of microorganisms within the intestine, S.R. Kapadia [4] and authors hypothesized myocardial generation of proinflammatory cytokines, since cardiomyocytes are able to deliver cytokines with an increment within the level of end diastolic weight within the cleared out ventricle.

RESULTS

The essential cause of the obsessive actuation of the resistant reaction may be myocardial hypoxia and the coming about hypoxia of fringe tissues. This articulation is affirmed by a straightforwardly corresponding relationship between the seriousness course of CHF and the level of proinflammatory cytokines. In spite of the presence of different speculations within the launch of the neurotic handle of HF, most analysts property the enactment of pro-inflammatory cytokines to the number of root causes of the improvement and advance of CHF. Convincing evidence of one of the essential The parts of proinflammatory cytokines within the pathogenesis of CHF were gotten in work B.Bozkurt [5] and authors. In an try on rats, delayed implantation of TNF- α driven to expansion of the ventricles of the rodent heart with a diminish within the contractility of the heart.

The body's safe framework is enacted not as it were amid irresistible animosities, but moreover responds to factors that are etiological components the improvement of CHF (myocardial ischemia, hemodynamic stack). The most components of the resistant framework included within the advancement of CHF: pro-inflammatory cytokines, attachment particles, autoantibodies, endothelins, nitric oxide. Around 300 particles have a place to the cytokine bunch, which are a course of dissolvable peptide go between of the resistant framework that carry out its improvement, working and interaction with other systems of the human body. Agreeing to their organic part, all cytokines can be partitioned into three bunches: pro-inflammatory, anti-inflammatory and cardioprotective.

Cytokines have one of a kind properties: they are able to act on different target cells, regulating their work; different cyto Cytokines have for the most part paracrine or autocrine impacts; as it were a few have a systemic impact (tumor rot factor- α , interleukin-1)[6]. Cytokines incorporate the taking after primary bunches of operators: interleukins (counting lymphokines and monokines), tumor corruption figure, chemokines.

Two primary classes of proinflammatory cytokines have been distinguished, included within the pathogenesis of HF: vasoconstrictor cytokines (expansive endothelin, endothelin-1) and vasodepressor proinflammatory cytokines (TNF- α , IL-1, IL-6 and IL-8)[7]. Due to TNF-mediated quality acceptance, over the top generation of a wide extend of proinflammatory specialists (development variables, cytokines, arbiters, proteins of the intense stage of irritation, pyrogens), which have a key part within the pathogenesis of HF. For the primary time, the reliance of the TNF- α level within the blood serum of patients with HF and the seriousness of the utilitarian course of HF was uncovered B.Levine and authors in 1998.

Beneath the impact of TNF- α , the sum of cytokine-induced NO increments, which in turn suppresses the generation of endothelial NO, in this manner impeding endothelial work. NO moreover applies its impacts by actuating the forms of fibrosis, which eventually leads to remodeling of the heart. In expansion, shaped within the prepare of interaction NO and superoxide anions, peroxy nitrate [8], could be a profoundly receptive oxidant, moreover competent of having a cytotoxic impact, oxidizing lipids, harming cell films, altogether decreasing the contractility of the

myocardium. TNF- α applies its impacts by enacting apoptosis, which loses its versatile esteem and leads to a diminish within the number of reasonable cardiomyocytes, which encourage leads to a dynamic diminish within the contractile work of the myocardium.

The method of actuation of apoptosis happens by binding TNF- α to the so-called passing receptors on the surface of cardiomyocytes. Activation of passing receptors and oxidative stretch of cardiomyocytes, which increments beneath the impact of TNF- α , trigger caspase a cascade that in the long run triggers hereditarily modified cell death. TNF- α can too have a coordinate poisonous impact on cardiomyocytes.

DISCUSSION

The part of other pro-inflammatory cytokines within the pathogenesis of CHF has moreover been demonstrated as a result of various considers. IL-1 takes an interest within the movement of myocardial fibrosis and compounding of the course of HF, plays an imperative part in atherosclerosis, contributing to the arrangement of atherosclerotic injuries, increased vascular aggravation and trigger plunge of plaque destabilization. IL-1 is included within the improvement of unfavorable remodeling by expanding the expression of network metallo proteinases [9]. IL-1 has the capacity to disturb the work of the heart muscle by stifling the contractility of the myocardium, contributing to the movement of myocardial hypertrophy and causing apoptosis of cardiomyocytes .

IL-6, just like the above-described proinflammatory cytokines, alludes to cytokines of systemic action. Prospective thinks about appear that a tall level of IL-6 in blood plasma could be a dependable and free indicator of the development of MI in solid individuals, as well as overall mortality within the elderly. There was also a more noteworthy increase within the level of IL-6 in patients with myocardial localized necrosis within the intense arrange, particularly within the nearness of CHF indications coupled with decreased LV LV[10] , compared with the level of this cytokine in patients with steady coronary heart disease.

To survey the conceivable relationship between the level of proinflammatory cytokines and the seriousness of CHF, these information were analyzed in patients who were re-hospitalized or passed on due to decompensation of CHF It was uncovered that the unfavorable the course of CHF with backslides and rehashed hospitalization, as well as with lethal results against the foundation of decompensation of heart disappointment is related with a critical increment within the level of proinflammatory cytokines, in spite of enormous combined pathogenetic therapy.

The affirmed information on the participation of TNF- α within the advancement of CHF driven to the advancement of two drugs, the component of activity of which is the official and neutralization of cytokine: etanersept-a protein speaking to the extracellular space of human The P-75 receptor for TNF- α and infliximab, having a place to the gather of monoclonal antibodies, authoritative to both soluble and transmembrane TNF- α with tall liking .

However, the positive impact of these drugs on the course and forecast of CHF agreeing to the comes about of expansive considers with etanersept (RECOVER and RENAISSANCE) and with infliximab [11] isn't demonstrated. On the opposite, the considers were ended rashly due to an increment within the recurrence of hospitalizations and mortality in patients getting infliximab. There is prove that the utilize of drugs, having an inhibitory impact on TNF- α in patients CHF moves forward LV contractile work and guess of patients .

One of them is pentoxifylline, a subsidiary of xanthine, which avoids TNF- α translation by blocking intracellular aggregation and RNA of this cytokine. The advantageous impact of pentoxifylline on the forecast and course of CHF demonstrated in considers conducted by K.Silva [12]. The expansion of pentoxifylline to standard treatment led to an change within the clinical condition of patients and an increment in LVEF, which was went with by a diminish within the level of markers of irritation (cerebral natriuretic peptide, C-reactive protein, TNF- α) and apoptosis.

CONCLUSIONS

The association of the safe framework joins within the pathogenesis of CHF may be a moderately unused instructing in cutting edge cardiology, which needs a more point by point study with large comparative imminent ponders. Actuation of the cytokine framework in patients with CHF could be a marker of illness movement and decides the seriousness of the course of HF[13], pathogenetic effects cytokines are actualized in different ways, which needs uncommon pharmacotherapeutic strategies in these patients. Separation of person bunches of CH with a slight diminish LVF and with protected LVF moreover requires the consider of nitty gritty characteristics, pathophysiology of patients in this bunch, with the definition of restorative strategies, this will be encouraged by advance study of immunological changes in patients with CHF.

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