

Depresija i zatajivanje srca: smanjenje kvalitete života i razmatranja povezana sa zbrinjavanjem

Depression and heart failure: decline in quality of life and future management considerations

Nebi R. Musliu*, Nazmie F. Ibishi, Zylfije Hundozi

Klinički bolnički centar Kosova, Priština, Kosovo
University Clinical Center of Kosovo, Prishtina, Kosovo

SAŽETAK: U ovom članku iznose se rezultati istraživanja u kojem se ocjenjuju učinci depresije kao mentalnog poremećaja na liječenje i prognozu zatajivanja srca (ZS). Čini se da su povezanost ZS i depresija u vezi kako s psihološkim aspektima teške srčane bolesti, tako i s patofiziološkim i psihosocijalnim mehanizmima. Depresija može biti čimbenik rizika za razvoj ZS i obrnuto, kronična bolest kao što je ZS može uzrokovati depresiju. Smatra se da su simptomi depresije najsnažniji prediktor pogoršanja zdravstvenog stanja, povećanog pobola, rehospitalizacije te čak i smrtnosti bolesnika koji boluju od ZS. Različiti modaliteti liječenja uključuju farmakološku terapiju, psihoterapiju (npr. suportivne, kognitivne, bihevioralne, interpersonalne, psihodinamične i grupne terapije) i ako je potrebno, psihijatrijsko bolničko liječenje. Otkrivanje i liječenje depresije bi trebalo biti dijelom cjelovitog pristupa bolesnicima sa ZS od strane kardiologa i liječnika obiteljske medicine. Razvoj učinkovitih terapijskih intervencija za bolesnike sa ZS, kako za modificiranje visokorizičnih životnog stila i ponašanja, tako i za smanjenje psihosocijalnih faktora rizika ostaje i dalje izazov. Prepoznavanjem i uspješnim liječenjem depresije se mogu poboljšati klinički ishodi što može biti važna komponenta zbrinjavanja bolesnika sa SZ. Na taj način također se može značajno poboljšati kvaliteta života.

KLJUČNE RIJEČI: srčano zatajivanje, depresija, kvaliteta života.

SUMMARY: This article is focused on the research studies assessing the effects of depression as the mental disorder on the treatment and the prognosis of heart failure (HF). The association between HF and depression seems to be related to the psychological aspects of severe heart disease and to pathophysiological and psychosocial mechanisms. Depression may be a risk factor for the development of HF and conversely, chronic illnesses such as HF may precipitate depression. Furthermore depression symptoms are reported to be the strongest predictor of decline in health status, increased morbidity and hospital readmissions or even mortality in HF patients. Different treatment modalities include pharmacologic therapy, psychotherapy (e.g. supportive, cognitive behavioral, interpersonal, psychodynamic and group therapies) and when necessary, psychiatric hospitalization. Detection and treatment of depression should be a part of the comprehensive approach to HF patients by cardiologists and family physicians. The development of effective therapeutic interventions both for modifying high-risk lifestyles and behavior and for reducing psychosocial risk factors for HF patients remains a challenge. Recognition and successful treatment of depression might improve relevant clinical outcomes among patients with chronic HF and may be an important component of HF care and significantly improve quality of life.

KEYWORDS: heart failure, depression, quality of life.

CITATION: *Cardiol Croat.* 2013;8(3-4):83-87.

Uvod

Simptomi depresije su česti kod bolesnika sa zatajivanjem srca (ZS), a povezani su s težim oštećenjem općeg zdravstvenog stanja te predstavljaju snažan predskazatelj pogoršanja simptoma ZS, funkcijskog stanja i kvalitete života. U ovom članku prikazuju se istraživanja u kojem se ocjenjuju učinci depresije kao mentalnog poremećaja na liječenje i prognozu ZS.

Introduction

Depression symptoms are common in patients with heart failure (HF), and are associated with markedly impaired baseline health status, and are a strong predictor of impairment of HF symptoms, functional status, and quality of life. This article reviews the research assessing the effects of depression as mental disorder in HF treatment and prognosis.

Utjecaj depresije na zdravstveno stanje bolesnog pacijenta može biti značajan, uključujući smanjenu kvalitetu života, lošu vlastitu brigu i suradljivost u liječenju, povećane troškove, pojačane simptome, povećani pobol i konačno povećanu smrtnost. Depresija je prvenstveno bolest mozga, no sa značajnim učincima na mnoge organske sustave.¹

Čini se da su povezanost ZS i depresije u vezi kako s psihološkim aspektima teške srčane bolesti, tako i s patofiziološkim i psihosocijalnim mehanizmima.²

Klinički značajna depresija bila je prisutna u 21,5% bolesnika sa ZS, a varirala je ovisno o uporabi upitnika ili dijagnostičkog intervjua (33,6% odnosno 19,3%) te je između ostalih čimbenika ovisila o težini ZS prema *New York Heart Association* klasifikaciji (11% u I. stupnju u odnosu na 42% u IV. razred). Kombinirani rezultati su ukazali na više stope smrtnosti i sekundarnih događaja (RR=2,1, 95% CI 1,7-2,6), trendove povećanog korištenja zdravstvene zaštite, kao i višu učestalost hospitalizacije i posjeta hitnoj medicinskoj pomoći kod depresivnih bolesnika.³

Depresija može biti čimbenik rizika za razvoj ZS i obrnuto, kronična bolest kao što je ZS može prouzročiti depresiju.

Razlozi za visoku učestalost depresije i snažnu povezanost simptoma depresije i negativnih ishoda kod bolesnika sa ZS su nepoznati. *Jiang i sur.*⁴ su otkrili da je dijagnoza velikog depresivnog poremećaja bila povezana s povećanom smrtnosti nakon tri mjeseca i nakon godine dana kod bolesnika s kongestivnim zatajivanjem srca (KZS). *Rumsfeld i sur.*⁵ su pokazali da su simptomi depresije snažan predskazatelj kratkoročnog pogoršanja simptoma specifičnih za ZS. *Jünger i sur.*⁶ su zaključili da je depresija značajan predskazatelj povećane smrtnosti kod bolesnika koji boluju od KZS, a koji nisu liječeni od depresije.

Usprkos očitim negativnim učincima depresije i smanjene kvalitete života (QoL) zbog KZS, ovi čimbenici u kliničkoj praksi mogu ostati neprepoznati i nedovoljno liječeni,^{7,8} ponajprije zbog sličnosti simptoma jer su umor, malaksalost, nesanica, smanjena koncentracija i nedostatak inicijative simptomi depresije, ali i tipični simptomi KZS.³

Pogoršanje zdravstvenog stanja

Bolesnici s velikim depresivnim poremećajem bili su u boljem fizičkom stanju nego bolesnici sa KZS. Najinteresantnije je da su bolesnici s KZS u III. stupnju prema NYHA ljestvici imali slično smanjenje QoL u području psihičkog zdravlja kao i bolesnici s velikim depresivnim poremećajem uz njihovo već dramatično pogoršano fizičko zdravlje. Ovi podaci su u skladu s rezultatima pojedinih studija koje pokazuju da veliki dio bolesnika s KZS boluje od depresije.⁹⁻¹¹ Tako je QoL u bolesnika u III. stupnju prema NYHA ljestvici smanjena ne samo u pogledu fizičkog, nego i psihičkog zdravlja. Ovi rezultati ukazuju na učinke KZS na središnji živčani sustav. Promjene središnjih neurohumoralnih sustava regulacije ili smanjena centralna perfuzija mogu narušiti kognitivne sposobnosti i pospješiti latentnu sklonost depresivnim poremećajima. Preglednim člankom je utvrđeno da je KZS povezano s generaliziranim kognitivnim pogoršanjem, što uključuje smanjenje pamćenja i pažnje.¹²

Bolesnici s dilatativnom kardiomiopatijom imaju značajna pogoršanja u fizičkoj aktivnosti, ograničenja izvršavanja funkcija i uloga zbog fizičkih i emotivnih problema, socijalnog funkcioniranja, mentalnog zdravlja, percipiranju općeg zdravlja, spavanju i vitalnosti. Smanjenje QoL bilo je povezano sa smanjivanjem vrijednosti frakcije skraćenja, po-

The impact of depression on the medically ill patient can be profound, including decreased quality of life, poor self-care and treatment compliance, increased cost utilization, symptom amplification, increased morbidity, and ultimately increased mortality. Depression is first and foremost a brain disease, but it is a brain disease with considerable deteriorating effects on multiple organ systems.¹

The association of HF and depression seems to be related both to the psychological aspects of severe heart disease, and to pathophysiological and psychosocial mechanisms.²

Clinically significant depression was present in 21.5% of HF patients, and varied by the use of questionnaires versus diagnostic interview (33.6% and 19.3%, respectively) and according to HF severity defined by the New York Heart Association (11% in class I vs. 42% in class IV), among other factors. Combined results suggested higher rates of death and secondary events (RR=2.1, 95% CI 1.7-2.6), growing trends towards increased healthcare use, and higher rates of hospitalization and emergency room visits among depressed patients.³

Depression may be a risk factor for the development of HF and conversely, chronic illnesses such as HF may precipitate depression.

The reasons for the high prevalence of depression symptoms and the strong connection between depression symptoms and adverse outcomes in patients with HF are unknown. *Jiang et al* found that the diagnosis of major depression was associated with increased mortality after 3 months and at 1 year in patients with congestive heart failure (CHF). *Rumsfeld et al* showed that depression symptoms are a strong predictor of a short-term impairment of HF-specific symptoms. *Jünger et al* concluded that depression was a strong predictor of increased mortality in CHF patients not treated for depression.

Despite the obvious negative effects of depression and a reduced quality of life (QoL) caused by CHF, these factors often go unrecognized and undertreated in clinical practice,^{7,8} presumably because of the similarity between symptoms, such as fatigue, malaise, insomnia or concentration deficit and the lack of initiative as depression symptoms are also typical CHF symptoms.³

Health status decline

Patients with major depression were in a better physical condition than patients with CHF. Most interestingly, the patients with CHF in NYHA class III had a similar impairment of QoL in the mental health domains as patients with major depression, in addition to their already dramatically reduced physical health. These data are in accord with the findings of some studies showing that a large proportion of patients with CHF suffer from depression.⁹⁻¹¹ Thus the QoL in patients in NYHA class III is reduced not only physically but also mentally. These results reflect the effects of CHF on the central nervous system. Changes in central neurohumoral regulation systems or diminished central perfusion might impair cognitive capacity and trigger a latent vulnerability to depression disorders. A systematic review has found that CHF is associated with a pattern of generalized cognitive impairment which includes memory and attention deficits.¹²

Patients with dilatative cardiomyopathy reported significant impairments in physical functioning, role limitations owing to physical and emotional problems, social functioning, mental health, perceptions of general health, sleep, and vitality. Im-

većanjem veličine lijeve klijetke na kraju dijasole, prisutnošću ZS i mitralne regurgitacije.

Objavljeno je da su simptomi depresije najjači predskazatelj pogoršanja zdravstvenog stanja uključujući kratkoročno pogoršanje SZ⁵ i obrnuto, zdravstveno stanje mjereno upitnikom *Kansas City Cardiomyopathy Questionnaire* bio je neovisan predskazatelj razvoja simptoma depresije kod izvanbolničkih bolesnika sa ZS.¹³ Također je poznato da je depresija kroničnih bolesnika sa ZS povezana s povećanom učestalosti rehospitalizacije i troškovima.⁴

Bolesnici s KZS također imaju smanjenu kvalitetu života u pogledu zdravstvenog stanja u odnosu na bolesnike koji imaju neke druge kronične bolesti kao i u odnosu s općom populacijom, a smanjena kvaliteta života se čini prediktivnom za neplanirane ponovne prijeme i smrtnost.¹³⁻¹⁵

Nakon prilagodbe za opće zdravstveno stanje i više od 20 varijabli, depresivni pacijenti su bili izloženi riziku značajnog pogoršanja simptoma njihovog ZS, fizičkog i socijalnog funkcionalnog stanja te QoL. Stoga, izvanbolnički bolesnici sa ZS i depresijom nisu izloženi samo riziku pogoršanja općeg stanja i kratkoročnog pogoršanja njihovih simptoma ZS, nego i smanjenoj funkciji i QoL.¹⁶ Ovi rezultati su dosljedni prethodnim studijama koje pokazuju da je depresija uobičajena kod populacija sa ZS^{10,16,17} i da se većina depresivnih bolesnika sa ZS ne liječi od depresije.^{18,19}

Prema rezultatima *Steptoe i sur.*,¹⁴ psihološka prilagodba može biti glavna odrednica QoL. Utjecaj neurohumoralnih čimbenika i citokina, za koje je poznato da su povećani u KZS, na QoL nije jasan^{20,21}. Također je moguće da je dnevno pogoršanje bolesti uzrokovano kroničnim stresom. Ovisno o stupnju temeljne ranjivosti, može nastati osjećaj bespomoćnosti popraćen depresijom i smanjenom QoL.^{22,23}

SF-36 je višenamjenski upitnik s 36 upita kojim se mjeri osam domena zdravlja: fizičko funkcioniranje, ograničenje uloga zbog fizičkog zdravlja, tjelesna bol, opće percepcije zdravlja, vitalnost, socijalno funkcioniranje, ograničenja uloga zbog emotivnih problema te psihičko zdravlje. Rezultati osam zdravstvenih domena i dva sažetka mjerenja fizičkog i psihičkog zdravlja prikazuju se ljestvicom.

Mogućnosti liječenja

Liječenje depresije i različitih simptoma koji su prisutni kod bolesnika sa ZS mogu značajno poboljšati QoL.¹⁴ Različiti modaliteti liječenja uključuju farmakološku terapiju, psihoterapiju (npr. suportivne, kognitivne, bihevioralne, interpersonalne, psihodinamske i grupne terapije) i ako je potrebno, psihijatrijsku hospitalizaciju.

Brže rješavanje depresije može dovesti do poboljšane samostalne skrbi, boljeg prihvaćanja režima liječenja te poboljšane QoL, uz smanjenje morbiditeta i mortaliteta.

Psihosocijalno liječenje također može smanjiti negativne posljedice depresije kod bolesnika s KZS²⁴ iako su učestalost i učinkovitost psihoterapije nepoznati.

Otkrivanje i liječenje depresije bi trebalo biti dijelom cjelovitog pristupa bolesnicima sa ZS od strane kardiologa i liječnika obiteljske medicine. Kvalitetna kardiološka skrb bi trebala uključivati i ocjenu o psihosocijalnom stanju, jačanje odnosa liječnika s bolesnikom, obitelji i socijalnu povezanost te ako je primjereno, antidepresive i psihoterapiju. Selektivni inhibitori ponovne pohrane serotonina su djelotvorni i sigurni antidepresivi kod kardioloških bolesnika. Ova skupina lijekova bi se trebala propisivati u terapijskim dozama sve dok se ne postigne održana remisija.^{2,25}

pairment in several domains of QoL was associated with low shortening fraction, high left ventricular end-diastolic diameter, and the presence of HF and mitral regurgitation.

Depression symptoms were reported to be the strongest predictor of health status decline including short-term impairment of HF⁵ and vice versa, health status as measured by the Kansas City Cardiomyopathy Questionnaire was an independent predictor of developing depression symptoms in outpatients with HF.¹³ It is also known that among chronic HF patients, depression is associated with increased rehospitalization and cost.⁴

Furthermore, patients with CHF also show a reduced health-related QoL compared with patients who have other chronic diseases, as well as compared with the general population, and reduced QoL seems to be predictive for unscheduled readmissions and mortality.¹³⁻¹⁵

After adjusting for baseline health status and over 20 patient variables, depressed patients were at risk for significant impairment of their HF symptoms, physical and social functional status, and QoL. Therefore, HF outpatients with depression are not only at risk for impaired baseline health status and for short-term declines in their HF symptoms, but also in decreased function and QoL.¹⁶ These findings are consistent with previous studies reporting that depression is common in HF populations^{10,16,17} and that the majority of depressed patients with HF are not being treated for depression.^{18,19}

According to *Steptoe et al.*,¹⁴ psychological adjustment may be a major determinant of QoL. The influence of other variables on QoL — such as neurohumoral factors and cytokines, which are known to be increased in congestive heart failure^{20,21} — is presently unclear. It is also possible that the daily impairment of the disease causes chronic stress. Depending on the degree of underlying vulnerability, this could lead to a feeling of hopelessness followed by depression and reduced QoL.^{22,23}

SF-36 is a multipurpose, 36-item survey that measures eight domains of health: physical functioning, role limitations due to physical health, bodily pain, general health perceptions, vitality, social functioning, role limitations due to emotional problems, and mental health. It yields scale scores for each of these eight health domains, and two summary measures of physical and mental health.

Treatment options

Treatment of depression and diverse symptoms reported by patients with HF might significantly improve QoL.¹⁴ Different treatment modalities include pharmacological therapy, psychotherapy (e.g., supportive, cognitive, behavioral, interpersonal, psychodynamic, and group therapies), and, when necessary, psychiatric hospitalization.

A more rapid resolution of depression can lead to improved self-care, increased compliance with medical regimens, and an improved QoL, in addition to reduction of morbidity and mortality.

Psychosocial treatments may also reduce the negative consequences of depression in patients with CHF²⁴, although rates and effects of psychotherapy are unknown.

Detection and treatment of depression should be part of a comprehensive approach to HF patients by cardiologists and general practitioners. Good quality cardiac care should include psychosocial assessment, strengthening of the doctor-patient relationship and family and social bonds, and, when appropriate, antidepressants and psychotherapy. Se-

Bihevioralna kardiologija je područje koje se razvija u kliničkoj praksi, a koje se temelji na priznanju da štetna ponašanja životnog stila, emocionalni čimbenici i kronični životni stres mogu pridonijeti razvoju ateroskleroze i neželjenim srčanim događajima. U posljednjih nekoliko godina značajno se proširilo patofiziološko razumjevanje kako psihosocijalni čimbenici rizika doprinose aterosklerozi i neželjenim srčanim događajima.

Izazov razvoja učinkovitih terapijskih intervencija kako za modificiranje visokorizičnih životnog stila i ponašanja, tako i za smanjenje psihosocijalnih čimbenika rizika za bolesnika sa ZS prisutan je i dalje. Sve je više dokaza da intervencije poput tjeleježbe te mjera sekundarne prevencije koji pored više čimbenika rizika uključuju i psihosocijalne intervencije, mogu biti učinkovite u liječenju psihološkog distresa i poboljšanju ishoda kod bolesnika sa ZS.

Važnost depresije na smanjenu QoL kao čimbenika rizika smrtnosti i ponovne hospitalizacije kod bolesnika sa ZS pojačava hitnu potrebu za odgovarajućim dijagnostičkim alatima i protokolima liječenja za ovu rastuću populaciju bolesnika. Iako gotovo jedna trećina ove neselektivne populacije ima rezultate probira koji ukazuju na depresivnu patologiju, samo se nekoliko bolesnika podvrgava psihosomatskom ili psihoterapeutskom liječenju.²⁶

U usporedbi s redovnom skrbi temeljenom na smjernicama, tjeleježba postiže umjereno smanjenje simptoma depresije, iako je klinički značaj ovog poboljšanja nepoznat.²⁷

Buduća razmatranja

Prepoznavanjem i uspješnim liječenjem depresije se mogu poboljšati relevantni klinički ishodi kod bolesnika s KZS što može biti važna komponenta skrbi za ZS i značajno poboljšati QoL.

Liječenje psihičkih aspekata bi se trebalo razmotriti kao dio zbrinjavanja ZS, kako bi se smanjila anksioznost, depresija te poremećaji društvene funkcije. Rutinska uporaba upitnika SF-36 može pomoći u prepoznavanju bolesnika koji trebaju daljnju pomoć kod unaprjeđenja svoje QoL.

Treba razviti i ispitati intervencije kojima se može povećati suradljivost i spriječiti ponovni prijem vezan za ZS u cilju poboljšanja QoL bolesnika koji boluju od ZS, a prepoznavanje predisponirajućih čimbenika za recidiv ZS može snažno doprinijeti optimalnom liječenju.

Received: 1st Feb 2013; Updated: 12th Feb 2013.

*Address for correspondence: "Rrethi i Spitalit" p.n., 10000 Prishtina, Republic of Kosovo.

Phone: +37744296765

Fax: +38138223153

E-mail: nazmiemb3@hotmail.com

lective serotonin reuptake inhibitors are effective and safe antidepressants in cardiac patients. They should be prescribed in therapeutic doses until sustained remission is obtained.^{2,25}

Behavioral cardiology is an emerging field of clinical practice based on the recognition that adverse lifestyle behavior, emotional factors and chronic life stress can all promote atherosclerosis and adverse cardiac events. In recent years, the pathophysiologic understanding of how psychosocial risk factors contribute to atherosclerosis and adverse cardiac events has broadened substantially.

The development of effective therapeutic interventions both for modifying high-risk lifestyles and behavior and for reducing psychosocial risk factors for HF patients remains a challenge. Nevertheless, there is increasing evidence that interventions such as exercise training, multi factorial secondary prevention efforts that incorporate psychosocial interventions may be effective in treating psychological distress and improving outcomes among patients with HF.

The importance of depression on reduced QoL as risk factors for mortality and rehospitalization in HF patients reinforces the urgent need for adequate diagnostic tools and treatment protocols for this growing patient population. Although nearly one-third of this unselected population showed screening results indicating depressive pathology, only a few patients were already in psychosomatic or psychotherapeutic treatment.²⁶

Compared with guideline-based usual care, exercise training resulted in a modest reduction in depression symptoms, although the clinical significance of this improvement is unknown.²⁷

Future considerations

Recognition and successful treatment of depression might improve relevant clinical outcomes among patients with CHF and may be an important component of HF care and significantly improve QoL.

The treatment of non-physical aspects should be considered as a part of the management of HF, in order to reduce anxiety, depression, and disturbances of social function. The routine use of the SF-36 might help to identify patients who need further help to improve their QoL.

Interventions that can increase compliance and prevent HF related readmission in order to improve the QoL of patients with HF need to be developed and tested and, the identification of precipitating factors for relapse of HF may strongly contribute to optimal treatment.

Literature

1. Blumenfeld M, Strain JJ. Psychosomatic medicine. Lippincott Williams & Wilkins, 2006.
2. Cardoso G, Trancas B, Luengo A, Reis, Heart failure and depression: an association with clinical importance. Rev Port Cardiol. 2008;27(1):91-109.
3. Rutledge T, Reis VA, Linke SE, Greenberg BH, Mills PJ. Depression in heart failure: a meta-analytic review of prevalence, intervention effects, and associations with clinical outcomes. J Am Coll Cardiol. 2006;48(8):1527-37.
4. Jiang W, Alexander J, Christopher E, et al. Relationship of depression to increased risk of mortality and rehospitalization in patients with congestive heart failure. Arch Intern Med. 2001; 161:1849-56.
5. Rumsfeld JS, Havranek E, Masoudi FA, et al. Depressive symptoms are the strongest predictors of short-term declines in health status in patients with heart failure. J Am Coll Cardiol. 2003;42:1811-7.
6. Juenger J, Schellberg D, Mjller-Tasch TH, et al. Depression increasingly predicts mortality in the course of congestive heart failure. Eur J Heart Fail 2005;7:261-7.

7. Davidson JR, Meltzer-Brody SE. The under recognition and undertreatment of depression: what is the breadth and depth of the problem? *J Clin Psychiatry*. 1999;60:(suppl 7):4-9.
8. Alexopoulos GS, Borson S, Cuthbert BN, et al. Assessment of late-life depression. *Biol Psychiatry*. 2002; 52:164-74.
9. Murberg TA, Bru E, Svebak S, Tveteteras R, Aarsland T. Depressed mood and subjective health symptoms as predictors of mortality in patients with congestive heart failure: a two-year follow-up study. *Int J Psychiatry Med*. 1999;29:311-26.
10. Havranek EP, Ware MG, Lowes BD. Prevalence of depression in congestive heart failure. *Am J Cardiol*. 1999;84:348-50.
11. Juenger J, Kraemer S, Schellberg D, et al. Quality of Life, anxiety and depression dependent on NYHA-class in patients with chronic heart failure [abstract]. *Psychosom Med*. 1998;60:106-7.
12. Almeida OP, Flicker L. The mind of a failing heart: a systematic review of the association between congestive heart failure and cognitive functioning. *Intern Med J*. 2001; 31(5):290-5.
13. Holzapfel N, Zugck C, Müller-Tasch T, et al. The German Heart Failure Network. Routine screening for depression and quality of life in outpatients with congestive heart failure. *Psychosomatics*. 2007;48(2):112-6.
14. Juenger J, Schellberg D, Kraemer S, et al. Health related quality of life in patients with congestive heart failure: comparison with other chronic diseases and relation to functional variables. *Heart*. 2002;87:235-41.
15. Koenig HG. Depression outcome in inpatients with congestive heart failure. *Arch Intern Med*. 2006;166:991-6.
16. Skotzko CE, Krichten C, Zietowski G, et al. Depression is common and precludes accurate assessment of functional status in elderly patients with congestive heart failure. *J Card Failure*. 2000;6:300-5.
17. Vaccarino V, Kasl SV, Abramson J, Krumholz HM. Depressive symptoms and risk of functional decline and death in patients with heart failure. *J Am Coll Cardiol*. 2001;38:199-205.
18. Koenig HG. Depression in elderly patients with congestive heart failure. *Gen Hosp Psychiatry*. 1998;20:29-43.
19. Havranek EP, Masoudi FA, Rumsfeld JS, Steiner JF. A broader paradigm for understanding and treating heart failure. *J Card Failure*. 2003;9:147-52.
20. Zugck C, Krueger C, Duerr S, et al. Is the six minute walk test a reliable substitute for peak oxygen uptake in patients with dilated cardiomyopathy? *Eur Heart J*. 2000;21:540-9.
21. Torre AG, Kapadia S, Benedict C, et al. Proinflammatory cytokine levels in patients with depressed left ventricular ejection fraction: a report from the studies of left ventricular dysfunction (SOLVD). *J Am Coll Cardiol*. 1996;27:1201-6.
22. Abramson LY, Metalsky GI, Alloy LB. Hopelessness depression: a theory-based subtype of depression. *Psychol Rev*. 1989;96:358-72.
23. Alloy LB, Abramson LY, Whitehouse WG, et al. Depressed cognitive styles: predictive validity, information processing and personality characteristics, and developmental origins. *Behav Res Ther*. 1999;37:503-31.
24. Luskin F, Reitz M, Newell K, Quinn TG, Haskell W. A controlled pilot study of stress management training of elderly patients with congestive heart failure. *Prev Cardiol*. 2002;5:168-72.
25. Roose SP. Considerations for the use of antidepressants in patients with cardiovascular disease. *Am Heart J*. 2000;140:S84-S88.
26. Anxiety and depression in heart failure patients predict physical decline. <http://www.medscape.com/viewarticle/720145> (1st Feb 2013).
27. Blumenthal JA, Babyak MA, O'Connor C, et al. Effects of exercise training on depressive symptoms in patients with chronic heart failure: the HF-ACTION randomized trial. *JAMA*. 2012;308(5):465-74.



CroEcho2013



7. hrvatski ehokardiografski skup
s međunarodnim sudjelovanjem
7th Croatian Echocardiography Meeting
with International Participation

Organizator
Radna skupina za ehokardiografiju
i druge slikovne metode
Hrvatskoga kardiološkog društva



Radna skupina
za ehokardiografiju
i druge slikovne
metode



Hrvatsko
kardiološko
društvo



Ehokardiografski
tečaj s potvrdom
EACVI-ja
EACVI certified
echocardiography
course