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Brief Communication

Challenges on management of heart failure in Indonesia: a general practitioner's perspective

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Abstrak

Gagal jantung telah menjadi masalah kesehatan masyarakat karena insidensi dan prevalensi yang terus meningkat. Sebagian besar pasien dengan gagal jantung datang ke pelayanan kesehatan primer dan dikelola oleh dokter umum. Diagnosis yang akurat sangat diperlukan untuk manajemen penyakit ini. Umumnya gejala dan tanda saja tidak cukup spesifik untuk mendiagnosis penyakit gagal jantung. Beberapa studi menunjukkan masih banyak pasien gagal jantung yang tidak terdiagnosis maupun diterapi secara tidak tepat, walau sudah banyak pedoman tentang tatalaksana gagal jantung. Terbatasnya fasilitas merupakan hambatan utama dalam manajemen gagal jantung terutama di negara berkembang seperti Indonesia. Obat-obatan yang direkomendasikan sebagai terapi gagal jantung juga masih belum dipergunakan sebagaimana mestinya. Telaah ini membahas tentang tantangan dalam diagnosis dan tatalaksana gagal jantung pada layanan primer.

Abstract

Heart failure has become a public health problem with increasing incidence and prevalence. Many patients first came to the primary care and managed by general practitioner. Accurate diagnosis is essential to provide good management of heart failure. However, symptoms and signs alone are often neither sufficient nor specific to confirm the diagnosis. Some studies show that heart failure patients are still incorrectly diagnosed and inadequately treated, despite the availability of current guidelines. Inadequacy of facilities is the main obstacle in diagnosing and managing heart failure, especially in developing countries like Indonesia. The medications recommended for treating heart failure are still under-prescribed. This review discuss about the challenges of diagnosis and management of heart failure in primary care.

Keywords: heart failure, general practice, primary care

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Heart failure is defined as the inability of the heart to deliver blood and oxygen to meet with the requirements of metabolizing tissue, due to an abnormality of cardiac structure or function.[1] Heart failure is a common condition, with increasing incidence and prevalence.[2,3] Heart failure is especially common in elderly patients,[2] with over 50% of heart failure patients were above 70 years of age.[3] The burden of heart failure will continue to increase with the aging of the population and the increasing proportion of survivors with coronary disease.[4] Chronic heart failure may results in frequent patient hospitalizations and has a high mortality rate.[4] The five-year survival rate of chronic heart failure patients is worse than many malignant conditions.[2]

Most heart failure patients came to primary care clinic. Classic symptoms and signs may alert the physician to the possibility of heart failure, but they are not specific enough to confirm the diagnosis.[2] An accurate diagnosis of this syndrome can be difficult in the absence of advanced investigations.[4] Primary care studies from European countries showed that many patients with heart failure are still incorrectly diagnosed and inadequately treated.[2] The rate of the proper diagnosis of heart failure in the primary care is still less than 50%, compared to the gold standard

of specialist clinical assessment.[4] There are still few large population-based studies of the incidence and outcome of heart failure where the diagnosis has been made by a physician in general practice.[5]

Significant advances with the developments in pharmacotherapy and device-based approaches in the management of chronic heart failure over the last several years have demonstrated continued improvement in prognosis in general population as measured by reduced mortality and declining rates of hospitalization. European Society of Cardiology and American Heart Association have published guidelines to outline the appropriate application of recent proven therapies based on the latest clinical trials and other relevant sources.[6] These guidelines summarize and evaluate all of the available evidence and risk-benefit considerations, with the aim of assisting physicians in selecting the best management strategies for an individual patient.[1] However, application of the proven and recommended therapy in primary care remains a problem.

Challenges in diagnosis of heart failure

Accurate diagnosis is essential to provide good management of heart failure. Inaccurate assessment of milder heart failure in primary care often reflects the lack of sensitivity and specificity of symptoms and signs for this diagnosis.[1,7] The elderly, obese, and those with chronic obstructive pulmonary disease frequently present with non-specific symptoms (fatigue, shortness of breath) or signs (for example, peripheral edema) which may reflect a wide range of conditions other than, or in addition to, heart failure.[7]

Research evidence shows that symptoms and signs do not correlate well with impaired left ventricular systolic dysfunction and a normal chest x-ray does not exclude heart failure.[2] Symptoms that are more specific such as orthopnea and paroxysmal nocturnal dyspnea are less common, especially in patients with milder symptoms. Many signs of heart failure resulted from sodium and water retention, are also not specific. Peripheral edema is particularly non-specific, and more difficult to evaluate in patients receiving diuretic treatment. Elevated jugular venous pressure and displacement of the apical impulse, which is more specific signs for heart failure, are harder to detect.[1]

Since symptoms have low reliability, this may explain the finding that nearly half of the patients being managed in primary care are incorrectly diagnosed.[2] Misdiagnosing heart failure may lead to unnecessary long-term treatment. Difficulties in clinical assessment have made several problems in monitoring of the disease progress and treatment. In many developing countries, chest x-rays and echocardiography may not be easily accessible to doctors in primary care. The high cost for diagnostic studies and the lack availability of diagnostic facilities further contribute to the inaccurate assessment of heart failure.[7]

Hobbs et al[3] conducted the IMPROVEMENT (IMprovement PROgram in eValuation and managEMENT of Heart Failure) study. The primary objective of the study was to evaluate the patient's perception of heart failure and to assess the management of the disease. Most subjects included in this study presented with typical symptoms and signs of heart failure. There was low use of New York Heart Association (NYHA) classification and differentiation between systolic and diastolic causes, which very important to determine treatment strategies.[3]

A study conducted by Khunti et al[2] has found that, on diagnosing heart failure, most physicians relied on the variety of symptoms and clinical signs. In most practices, there was still no systematic method of diagnosing such patients, despite the availability of current guidelines. Many physicians mentioned that a past history of heart disease, such as a history of coronary artery disease, was more likely to alert them to diagnose heart failure. They frequently reported suspecting heart failure in patients who attended their practice with breathlessness or ankle edema. Many of them reported that they would diagnose heart failure after had a positive finding of basal crepitation on respiratory examination. Only a small number of physicians reported that they would conduct an examination for displaced apex beat or cardiomegaly. A few physicians mentioned a raised jugular venous pressure as a clue to the diagnosis. Some physicians excluded the diagnosis of heart failure if there was no positive clinical findings.[2]

Many physicians would arrange full blood count, urea, and electrolytes on all their patients with suspected heart failure, a chest x-ray, and a twelve-lead electrocardiogram. Some physicians excluded a diagnosis of heart failure on the basis of clinical examination and occasionally with the addition of a normal chest x-ray. Chest x-ray was preferred as

an investigation of choice because it was easy to organize and it was not expensive.[2] A study by Hobbs et al[3] found that electrocardiogram and chest x-ray were the most used diagnostic tests by physicians (90% and 84% respectively).

An echocardiography assessment was recommended for patients with suspected heart failure. Nevertheless, there were difficulties in selection of patients for this investigation in primary care.[8] Very few physicians would send their patient for echocardiography to confirm a diagnosis of heart failure, and most of them were not aware of the usefulness of echocardiography.[2] From the result of IMPROVEMENT study, physicians considered echocardiography as having low diagnostic value, with only 48% routine usage. Only 50% of physicians would differentiate systolic from diastolic heart failure.[3] A high false positive rate (53 - 74%) was shown in general practice based studies when echocardiography was used to confirm clinically diagnosed chronic heart failure.[7]

Early, slow-onset heart failure is more difficult to diagnose from just signs and symptoms. Some physician needs additional diagnostic tests, such as 'furosemide test', which cause weight loss and alleviation of symptoms after a short course of a loop-diuretic.[9] Khunti et al[2] mentioned that some physicians still rely on a trial of diuretics to diagnose heart failure, and would confirm the diagnosis if there was an improvement in symptoms. Some physician accepted the approach because of difficulty in obtaining echocardiography for their patients although this is not an ideal method.[2] No evidence of furosemide test could be found in the literature, and was not formally mentioned in the current guidelines.[9]

Rutten et al[10] conducted a study to analyze patients who were managed by physicians, in comparison to patients managed by cardiologists. The result of the study is that patients managed in general practice were older (mean age 79 years) and more often female than patients who were managed by cardiologists (mean age 64 years). Ischemic heart disease was found to be more prevalent in patients who were managed by cardiologists (31 vs 57%). Additional investigations such as chest x-ray (51% vs 84%), electrocardiography (39% vs 100%), and echocardiography (12% vs 97%) were performed more often significantly in patients who were managed by cardiologists.[10]

Challenges in management of heart failure

The main obstacles identified in management of heart failure in general practice were lack of awareness of the current guidelines, difficulty with diagnosis, selection bias towards younger patients, the high cost of drugs, and the lack of confidence to initiate therapy.[2] Sub-optimal pharmacotherapy for chronic heart failure was shown in international research. The actual assessment of drug used in heart failure management has focused on the use of individual agents irrespective of the severity of heart failure.[11]

Based on many trials, ACE inhibitors have shown a significant improvement in survival and reduction in hospital admissions for patients with heart failure, irrespective of etiology. However, many clinical surveys conducted in different countries revealed that ACE inhibitors are under-prescribed and under-dosed in patients diagnosed with heart failure both in primary care and in hospital practice.[12,13] Furthermore, the doses of ACE inhibitors used in clinical practice were lower than the doses shown in the clinical trials. Although recent studies showed that this situation is improving, the treatment regiment remains suboptimal.[12]

A study by Rutten et al[10] mentioned that beta-blockers were prescribed in only a minority of heart failure patients. There were still concerns because in the past, beta-blockers were contraindicated in heart failure. Another reason is that the use of beta-blockers, which have to start with a low dosage and very slowly up titration, is a process which will take several weeks and may lead to increase complaints in some patients.[10]

Study by de Groote et al[14] in French included 1,919 outpatients, with NYHA class II–IV heart failure and a left ventricular ejection fraction < 40%. An improvement was found in the therapeutic management of heart failure outpatients, with an increase in prescription rates of recommended heart failure drugs. Diuretics (83%) were the most frequently prescribed treatment, followed by ACE inhibitors (71%), beta-blockers (65%), spironolactone (35%), and angiotensin receptor blockers (ARB) (21%). There were 61% of patients that received a combination of a beta-blocker and an ACE-inhibitors or ARB. However, doses prescribed remain lower than the target doses used in large randomized controlled trials. Target doses for ACE-inhibitor therapy were reached in 49% of

the patients, but a very low rate for beta-blockers and ARBs, which is only 18 and 9% of the patient. Older patients and patients with renal failure, were frequently under-treated.[14]

Rutten et al[10] found some difference in management of heart failure with their study in analyzing patients who were managed by physicians compared with patients managed by cardiologist. There was only little difference on diuretic usage between patients managed by physicians compared with cardiologist (85% vs 79%). The study shows that ACE inhibitors (40% vs 76%), beta-blocker (9% vs 30%), spironolactone (11% vs 32%), and ARB (6% vs 13%) were prescribed significantly lower in patients managed by physicians, despite their benefit in the management of heart failure.[10]

Problems on management of heart failure in Indonesia primary care

Indonesia is the world's largest archipelagic state, with about 17,508 islands, of which only about 6,000 are inhabited. The five main islands and 30 smaller island groups are home to the majority of the population. In 2005, the total population in Indonesia reached approximately 242 million, and approximately 60% of the total populations live in Java, which area is only less than 7% than the total area. There are 1,246 hospitals in Indonesia, of which 49.8% are private hospitals and mostly are located in Java. Hospital beds total 132,231 or one hospital bed per 1,628 population.[15] The primary health care facilities as health centers owned by government is available in all districts, but access to the health centers have not been equally distributed because limited health care facilities and health workers in remote and neighborhood areas. For people living in the remote and neighborhood areas, it also due to limited access as difficult geographical conditions.[16]

Diagnosing heart failure in the primary health care facilities in Indonesia was a great challenge to the physician. Interpretation of symptoms and signs of heart failure still remain as the main method to diagnose heart failure in primary care. Diagnostic tools such as electrocardiography and chest x-ray were very helpful, but sometimes their availability is still a problem, especially in rural or suburban public hospitals. Echocardiography and other sophisticated laboratory examinations were only available on larger hospital, which mostly concentrated in Java and the other 4 big islands in Indonesia.

Managing heart failure in primary care is also a problem in Indonesia. Diagnostic uncertainty and the difficulty to perform additional examination, such as measuring the creatinine or electrolytes levels, is a big obstacle for the physician to initiate or to adjust the dose of the drug therapy for heart failure. In primary care facilities, sometimes the appropriate drugs to treat heart failure were not available. ACE inhibitors and diuretics were the main pharmacological therapy that is widely available. Other drugs that were established by the current guideline as the mainstay of heart failure therapy were still under-prescribed. ARBs are rare because of their high cost. Cardio-selective beta-blockers and MRAs were also rare, especially in rural and remote site areas. Compliance is also a problem for patient in the long-term management of this disease. In remote site health care facilities, diagnostic tools and the drugs for heart failure were very scarce. Oxygen therapy and IV drugs were very rare that physician would rarely be able to do anything to manage an acute worsening of heart failure.

Calculating the big burden of heart failure to the nation, a higher level of concern is needed, especially from the government, to ensure the proper management of this disease. The addition of diagnostic and therapeutic facilities in rural or remote site areas will greatly assist in the management of this disease. General practitioners will always be the front line in diagnosing and managing heart failure, and continued medical education will help them to provide a better service to patients with cardiovascular disease.

In conclusion, accurate diagnosis is essential to provide good management of heart failure. The lack of sensitivity and specificity of symptoms and signs for and the lack of access to diagnostic facilities, mainly echocardiography, were the main challenges in diagnosing heart failure. A detailed guidance spelling out the benefits of treatment, appropriate selection of patients for treatment, dosing strategies and adverse effects to anticipate are important for general practitioners. Therefore, continued education of physicians is required in order to improve the diagnostic and therapeutic management of heart failure patients, with the support of the government in building better service in primary health care facilities. More research needs to be done to collect additional data about management of heart failure in primary care facilities.

Conflict of interest

The authors declare that this study is free of conflict of interest.

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