Research paper on wilson and jungner criteria for screening arterial hypertension...

Abstract

The aim of this study is to estimate the prevalence rates of arterial hypertension among adults in urban and rural environments of Malta. Logistic regression is used to obtain (OR) the odds ratio as a useful measure of association between outcome and variables. The prevalence of arterial hypertension among the Maltese population was 21. 9% (or 1. 14), (Nicita, 2008, p. 14). The World Health Organization (WHO) website was used to gather information in this study regarding arterial hypertension prevalence among the Maltese population. The likelihood of reporting arterial hypertension increased with women and age, migrants and individuals with morbidities, former smokers, non-white persons and individuals with health insurance appeared to report this disease more. In addition to that, both urban and rural areas of Malta had varying rates of prevalence of arterial hypertension which is seen to decrease with low levels of schooling. These differences may help to justify the use of Wilson and Jungner criteria for screening arterial hypertension at a national level among adults in Maltese.

Introduction

Hypertension is a disorder in which the heart's pumping power is weaker than normal and that the heart has become more of elastic causing ventricular hypertrophy (thickening of the heart muscle). High blood pressure can lead to damaged organs and various illnesses such as heart failure, stroke, renal failure (kidney failure) or heart attack. Arterial Hypertension is considered both a risk factor and a disease, and is among the most serious health problems of Maltese today. Symptoms and signs of

arterial hypertension occur when pressure is not capable of fully overcoming blood flow and elevated resistance. Fainting spells and shortness of breath (dyspnea) during spells of exertion are the common symptoms of the disease. Other symptoms include; swelling of the legs or ankles, dizziness, chest pain, and racing pulse. There are a number of factors that have been highly associated with hypertension. These include: Obesity, smoking, diabetes, lack of physical activity, stress, aging, chronic kidney disease and high levels of salt intake. (Dessapt, 2010, p. 56). Hypertension can be treated through exercise, medication, diet or a combination of all three. Notably, hypertension can best be prevented by maintaining a healthy weight, adjusting your lifestyle so that exercise and proper diet are key components, reduce alcohol intake and reducing stress and alcohol intake.

Epidemiology Technicalities

In Malta, about 800 new cases of arterial hypertension are diagnosed each year. Approximately 72, 750 people in Malta are suffering from hypertension. Close to 55, 200 of them are receiving treatments for the condition. This ailment is a national concern and the health minister in Malta notes that there are 21, 255 yellow cards which have been issued to these patients to enable them get access to free medicines. In 1984, close to half of the population in Malta aged 15 to 64 had an eminent arterial hypertension reading (47%). A fraction of this majority had a hypertension stage 1 and the remaining 8. 6% were classified as stage 2 hypertension. By 2011, participants with normal blood pressure increased by 16% with drops of close to 9% in the proportion of stage 2 hypertension and stage 1 (Pugh,

2010, p. 114). Seemingly, this disorder is more prevalent among females as compared to males. Arterial hypertension is one of the non-communicable diseases having the greatest impact on health care in Maltese to be specific. It accounts for approximately 24% of the disease burden in Maltese and 14% of deaths in the region. Arterial hypertension has for long been recognized as a key problem for public health (Singla, 2008, p. 94). It ranks forth as a cause of death globally. Secondly, it is responsible for 4% of adult disability (Kreatsoulas, 2011, p. 56).

Over 61% of persons in Malta are obese and as a result of it, the prevalence of hypertension is high which is most likely to be linked with their lifestyle than their genetic make-up. Malta has one of the world's highest rates of obesity and in 2002, ischemic heart attack killed 170 people per 100 000. Alongside that, the current situation in Malta is that its people have quite a good taste of health this can be backed by the health statistics which show that life expectancy at birth and at life are quite high. Precisely, life expectancy among the Maltese is at 60 years of age. A recent report from WHO indicated that the risks of deaths between ages 16 and 58 in Malta stands19th lowest risk for women and 4th lowest risk for men. This statistic shows that the government has quite put into health care and medication in Malta.

Material and Method

Study Population

A study done in 2011 by the World Health Organization (WHO) shows that arterial hypertension among other heart diseases such as stroke and

ischemic heart disease were leading causes of death in Malta accounting for 36% of all deaths. This is quite alarming since it could get to unmanageable levels leading to more deaths. More than three decades ago, various counties initiated Wilson and Jungner criteria for screening to identify persons with conditions which early treatment could prevent and reduce irreparable health damage. Today, it is estimated that more than one in five Maltese citizens suffer from arterial hypertension which a major risk factor that could lead to increases in stroke and heart diseases (Ackerman, 2011, p. 67). It is also estimated that persons with arterial hypertension if untreated, are more likely to suffer from stroke and even heart diseases. Better known as a ' silent killer', it is a serious health issue that could lead to kidney failure, heart failure, blindness and could even cause disability or premature death. Arterial hypertension can further be divided into two stages of severity known as stage 2 hypertension and stage 1 hypertension.

Statistical analysis

In 2008, 24. 3% of the Maltese population aged 18 and over were suffering from arterial hypertension. Keenly looking at the measured data including those on medications, 42% of the population studied had arterial hypertension. Men compared to women had an elevated blood pressure reading showing contrast to the prevalence that was self-reported. Looking at the hypertension control differences in gender, in the study population, women as compared to men had a higher proportion of uncontrolled hypertension. Actually, 62. 1% of women on hypertensive medication had blood pressure above normal while men had 38. 2% had normal blood

pressure (Koskinen, 2011, p. 117).

According to study groups for instance, The Action plan for implementation of the Malta Strategy for the Prevention of Noncommunicable Diseases 2011-2016, show that all noncommunicable diseases (NCDs) account for 87% of all deaths and 75% of the burden of diseases in Europe including Malta (Umar, 2011, p. 78). This study is quite important particularly in the aging society where these noncommunicable diseases are the major causes of most illnesses and deaths. Within the Maltese population, arterial hypertension is particularly an issue which appears to have increased prevalence of 62% as compared to Canada and The U. S. Arterial hypertension which in most cases causes cardiovascular diseases is estimated to cause 41% of all deaths in Malta.

Arterial pulmonary hypertension in connection with scleroderma disease has been regarded as a seemingly intractable condition until recently. Notably, treatments that are very effective are becoming available and trials involving subcutaneous and inhaled prostacylin analogues show signs (Berglund, 2012, p. 112).

The Wilson-Jungner Criteria for Appraising the Validity of a Screen Program

The National Screening Committee criteria for appraising the effectiveness, viability and appropriateness of a screening program are actually based on Wilson criteria, which address the test, condition, the treatment and screening program.

Wilson and Jungner criteria for screening are based on four concepts:

Knowledge of the disease

It entails the following;

- There must be early or latent symptomatic stage

- The condition should be important

- The natural course of the condition such as; development from latent to

declared disease ought to be pretty well understood.

Knowledge of the test

- The test should be acceptable to the proposed population

- It should be suitable for examination

Treatment for disease

- Facilities for treatment and diagnosis should be available

- There should be agreed policy concerning who should be treated as

patients

- Treatment for patients with recognized diseases should be accepted

Cost consideration:

- Cost of case finding (including treatment and diagnosis of patients

diagnosed) ought to be economically balanced in relation to medical care

expenditure (Rabinovitch, 2012, p 221).

Discussion

The benefit of Wilson & Jungner criteria for screening includes; improved

health status in patients who are actually diagnosed early and treated

optimally. On the contrary, harms of screening programs are false positive and false negatives which in most cases result to alarming concerns about autonomy, privacy highlighting the benefit of the evaluation of legal, ethical and societal aspects. Since most screened conditions are in a way, inherited disorders most often family members suffer the consequences. Moreover, expenses in health care ought to be balanced that is; should screening programs be funded, management of other activities may be impossible. Arterial screening proposals require watchful examination by the decision makers due to the need to illustrate the benefits and the possible harms that proportionate with the opportunity cost of consuming resources (Umar, 2011, p. 218).

Wilson & Jungner Criteria for Screening

Like other nations using the Wilson and Jungner criteria for screening diseases, certain countries have also incorporated the method in their health systems. In order to use these criteria, they have followed the following conditions and guidelines.

- The Condition

That for the Wilson and Jungner criteria to be used, the condition should be an important health problem. Secondly, natural history of the condition and the epidemiology ought to be satisfactorily understood. Cost-effective primary interventions ought to have been executed to a level where they can be practiced. Lastly, instances when the carriers of a mutation are identified probably resulting from screening; people's history with this status should be adequately understood (Nicita, 2008, p. 323).

- Test

Guidelines for the test are that, there should be a safe, simple, validated and precise screening test. Secondly, the distribution of test values the population in question should be a suitable cutoff level agreed and defined and it should also be known. This test should be acceptable to the targeted population and there should agreed policies on more diagnostic investigations of the person's positive test results and also on the alternatives available to the selected persons. Lastly, if the test is for mutations, then the used criteria in selecting the subsequent mutations that are to be covered through screening should be clearly set out if all possible mutations are not being tested (Mendis, 2011, p. 53).

- The Treatment

There should be an intervention and effective treatment particularly for patients who are identified through early detection, with proof of early treatment, instead of prolonged treatment leading to better outcomes. Based on guidelines, there should be agreed evidence based policies covering that persons be offered the right treatment. In addition to that, Clinical management of patient outcomes and conditions ought to be optimized prior to involvement in a screening program in all health care providers.

- The Screening Program

In order to conduct the screening program, there should be some evidence from premium randomized controlled trials confirming that the screening program is very effective in reducing morbidity or mortality. They provide information about the outcome of the test should be readily understood by

the person being screened and it must also be of value. Seemingly, the benefit of the screening program should outweigh the psychological and physical harm caused by the diagnostic procedures, the test and treatment (Bektas, 2009, p. 156). A plan to monitor and manage the agreed set of quality assurance standards and the screening program should be initiated. Adequate facilities and staffing for diagnosis, testing, program management and treatment should be available before the start of the screening program. Options for managing the condition such as improving treatment as well as providing other services should be considered to ensure no current and cost-effective intervention could be introduced within the available resources. In addition to that, evidence based information explaining investigation and treatment, consequences and treatment should be made available to willing participants to help them make informed decisions. Lastly, decisions about these limitations must be scientifically justifiable to the entire public (Pratt, 2010, p. 134).

- Limitations of Screening

There a number of limitations associated with screening, to start with, it can reduce complications or the risk but it cannot offer any guarantee of protection. Secondly, there are negative false results and an irreducible minimum of false positive results accrued to it. Therefore, screening is progressively more presented as risk reduction.

- Potential dangers of screening

Though screening programs are initiated to benefit populations, some participants are harmed by participation while others do not benefit from it at all. The reasons include;

Individuals who opt not to participate in screening could be discouraged for instance; they could be labeled as with regard to generic susceptibility as ' positive family'. False negatives seemingly occur since there are 100% sensitive which could result to false reassurance by both doctors and patients. This activity however, could dissuade patients from making more visits to health care organizations for screening tests. Subsequently, misinterpretation of results could lead to a phony sense of security. For instance, patients with normal blood pressure may continue to smoke. Studies show that false positive results in screening tests may have adverse effects. Different people have different health cultures and beliefs opt to be screened. These diverse views need to be appreciated putting in mind individual autonomy. Lastly, Implementation of screening tests could mean that most of the funds are diverted away from other related services (Kauczor, 2009, p. 46).

Why the Wilson and Jungner Criteria for Screening Ought to be a Condition for Screening Arterial Hypertension among Adults in the Maltese Population The above analysis justifies the current emphasis on the greater need to control which are responsible for arterial hypertension. In addition to that, it also justifies new trends and growing attention of the occurrence of hypertension which when used accordingly, will have a global insight into various factors (health care system, genetic and environmental) and bring forth new knowledge. This will play a key role in determining arterial hypertensions occurrences and outcomes (Seeling, 2009, p. 187).

A downward line in arterial hypertension has been the historical norm which has been documented from a couple of years ago. This report has therefore

extended the description of arterial hypertension trends in Malta region. The present data raise a series of coherent questions; why is there a big difference among the neighboring countries? How this extensive variation could be rseduced to enable more population share arterial hypertension benefits. Arguably, the reason the reason behind the large differences is quite an intriguing question which should deserve keen reflection due to the big impact on healthcare. Considering the relationship between arterial hypertension and heart attack, comprehensive variation in high blood pressure seemingly appears to be a multivariate analysis particularly between blood pressure and stroke mortality among the Maltese population (Antel, 2010, p. 89).

Arterial hypertension remains one of the leading noncommunicable diseases with high mortality rates in the region and the fourth cause of disability globally. Though these estimates vary at some point, there is a consistent message that in Malta the proportion of patients with acceptable arterial hypertension control is seemingly low especially among those treated and those diagnosed as well. Assessing all incidences and trends of arterial hypertension induced clinical conditions may in this regard prove paramount importance (Théroux, 2010, p. 117). Among the few options for a watchful measure, arterial hypertension presents quite an attractive option. Assuming that arterial hypertension could serve as a proxy for average blood pressure in the Malta population, this data presented clearly demonstrates the need to take into action to increase the treatment, diagnosis, arterial hypertension control and treatment in Malta the burden of arterial hypertension is steadily growing. Ostensibly, policies to increase the rate of arterial hypertension

offer the best criteria and approach while early pretension strategies should also be implemented in order to attain the targeted goal. Notably, from this study, it is of paramount importance to use the Wilson and Jungner criteria for screening arterial hypertension among adults in the Maltese population at a national level (Kaplan, 2010, p. 54).

The study critically interprets within the context of its strengths and possible limitations. With a quantitative approach, I have explored possible relationships between population characteristics, health statistics, arterial hypertension as well as prevalence of cardiovascular risk factors. Arterial hypertension accounts for quite a large proportion of mortality In Malta. Seemingly, this trend appears to increase in total numbers. This is greatly influenced by an aging population which really is an underlying challenge that ought to be confronted as it is seemingly shifting the population and distribution curve while increasing the rate of treatment, diagnosis and control of arterial hypertension (Gatzoulis, 2012, p. 67).

Conclusion

Arterial hypertension has had serious implications as it is among the major risk factors for serious cardiovascular events, including stroke and heart attack. Nonetheless, there are clear guidelines and examples where particular nations such as France and Germany have implemented good interventions such as the Wilson and Jungner criteria for screening diseases. They have been successful in reducing blood pressure and public health in general following the criteria's clear guidelines (Bratt, 2010, p. 211).

Since the Wilson and Jungner criteria for screening is cost-effective, the

Malta nation should initiate this criteria at a national level to screen adults in the region. Arterial hypertension is among the leading causes of mortality in the Malta region though estimates vary. This intervention should provide a point of inspiration for the Maltese community to realize that every community and region understand its own local needs while finding it suitable solutions. Preventing arterial hypertension is very possible through clear guidelines and a set of tangible interventions that seek to incorporate the Wilson and Jungner criteria (Olsson, 2010, p. 223). Due to the intricacy that is involved in the policy making of genetic screening, many doctors and scientists advocate for the use of the criteria. There are many variations particularly on the classic criteria of Wilson and Jungner that are based on greater numbers of different sets of criteria. Ultimately, the plans and decisions to implement develop and initiate Wilson and Jungner criteria for screening at a national level is being political. The Malta government is therefore faced with the difficult task of managing the use of current and trending screening information and technologies while balancing numerous needs and perspectives in the society. There definitely is a growing understanding among people of Malta that health and population-level policy decisions should be based on the values of the population and high quality evidence relating to screening policy decisions.

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