Psychosocial consequences in men taking part in a national screening program for abdominal aortic aneurysm

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Screening for abdominal aortic aneurysm (AAA) has proven to reduce AAA-related mortality, but how the knowledge of having an untreated AAA affects health and daily life requires further clarification. The aim was to investigate the psychosocial consequences and sense of coherence (SOC) in 65-year-old men diagnosed with AAA and participating in a national screening program during a 6-month follow-up compared with men with no AAA. The single-center cohort study included 52 men with AAA and 118 men without AAA. A questionnaire including the Short Form 36 Health Survey, Hospital Anxiety and Depression Scale, SOC, questions concerning stress, and questions related to AAA were answered at baseline and after 6 months. Men with AAA reported more problems with physical functioning, pain, and general health than men with a normal aorta at baseline. After 6 months, men with AAA still reported more problems with physical functioning and stress in relation to disease than men with normal aortic diameter. No differences were observed between groups in SOC, anxiety, and depression. A significantly higher satisfaction with information from the physician and desire to learn about the AAA diagnosis was reported at baseline compared with that at follow-up. Having knowledge about the AAA diagnosis may moderately impact physical health and perceived stress, and in combination with the increased prevalence of other cardiovascular diseases, may lead to impaired perceived health for men diagnosed with AAA. (J Vasc Nurs 2017;■:1-10)

The risk of rupture of an abdominal aortic aneurysm (AAA) is known to increase with the aortic diameter, and most cases of AAA remain symptomless until rupture.[1] Screening with ultrasound (US) to detect AAA in an early stage among 65-year-old men has been proven to reduce AAA-related mortality.[2,3] Therefore, screening programs have been introduced in some countries, including Sweden.[4] However, not all screening detected cases of AAA are treated with immediate surgical repair. The recommendation is that persons with an aneurysm between 30 and 55 mm should be followed with regular US examinations (interval size-dependent).[5] All screening programs aim to detect a condition in an asymptomatic population, which is always ethically controversial; therefore, all screening activities must be designed to meet fundamental ethical principles, such as human dignity and integrity.[6] Thus, it is desirable to also focus on the psychosocial consequences associated with screening for AAA.[7] Previous studies regarding psychosocial consequences and quality of life (QOL) in persons with small AAA diagnosed by screening and treated conservatively have demonstrated inconsistent results.[8–14] Therefore, the knowledge about how an untreated AAA detected by screening affects the individual's health and well-being remain unclear.

AAA is an abnormal widening of the infrarenal abdominal aorta with a diameter of ≥30 mm.[15] The risk for rupture increases 1%–11% with an aneurysm diameter of 50–59 mm.[5] The prevalence of developing an aneurysm increases with age, and 1.5%–1.8% of all men over 65 years of age in Sweden has an AAA,[4,16,17] and in Europe and the United States 2%–4%.[5,18] Rupture of an aneurysm (rAAA) is extremely uncommon before the age of 55 years.[5] With the exceptions of age, sex, and heredity, smoking is the main risk factor for developing an AAA.[15] The largest and most serious complication is rAAA because of its high mortality rate. Emergency AAA repairs have a high 30-day mortality rate, between 32% and 80%, whereas elective treatment has a mortality rate of 2%–6%.[5] Elective surgical treatment is recommended for an AAA larger than 55 mm in men.[2,5] Early detection by the US examinations to identify persons with AAA decreases the risk of rupture, which is the main reason for AAA screening. The 13-year results from the Multicentre Aneurysm Screening Study (MASS) randomized trial have shown that screening for AAA doubled the number of elective AAA surgeries, whereas the number of emergency treatments was halved.[3] However, for persons with small aneurysms (<55 mm), who are treated conservatively with continuous follow-up, this may be burdensome from a psychosocial perspective.

Psychosocial consequences are a broad concept, and no consensus about the definition has been found. Previous studies have focused on QOL dimensions such as mental health, in terms of worry, anxiety, depression, and stress, but also on physical

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impact and how social life can be affected.[8–14,19] Previous studies investigating psychosocial consequences have concluded that screening for AAA caused no psychosocial distress because no significant differences in anxiety and depression were found between persons with AAA and persons with normal aortic diameter.[9,11,12] However, other studies have demonstrated that screening for AAA results in impairments of QOL among persons with AAA.[8,10,13] Furthermore, poor self-assessed health before screening has been associated with having an AAA.[10,14]

Individuals have different ways of handling stress-related situations, such as being diagnosed with a potentially fatal disease. Antonovsky[20] salutogenic model of health explains how a person can stay well despite stressors. The model is recognized in nursing research and relations between high sense of coherence (SOC) and high QOL, fewer stressful events and less anxiety is seen in previous studies.[21–23] Regarding to the model it asserts that a person with a strong SOC can better manage stress-related situations than those who have a low SOC and it can be appraised with an instrument. SOC involves three elements, comprehensibility, manageability, and meaningfulness, and it is the person's healthy properties and own resources that make a person experience health and wellness.[20] However, the knowledge about personal qualities, such as SOC in relation to AAA screening is unknown. Increased knowledge about the psychosocial consequences of attending an AAA screening program may be an important part of identifying adversely affected persons and, when necessary, present opportunities for healthcare providers to offer support and complementary efforts.

The aim of this study was to investigate the psychosocial consequences and SOC in 65-year-old men who have participated in a national screening program and were diagnosed with AAA during a 6-month follow-up period compared with men diagnosed with a normal aortic diameter.

METHODS

The design was a cohort single-center study including men with and without AAA diagnosed by screening at Skåne University Hospital, who were followed up during 6 months by answering a questionnaire twice.

Sample

Two hundred ninety-nine 65-year-old men (93 with AAA, 206 without) had previously participated in a study aimed to investigate the relationship between AAA development and atherosclerosis between October 2011 and September 2014, were invited to participate in the present study. Men diagnosed with AAA were consecutively invited and men without AAA were randomly selected. Inclusion criteria for the present study were that the men should have taken part in the AAA screening program within a period of 12 weeks from the screening date. Furthermore, they should be able to understand Swedish and answer a questionnaire. The time limit of <12 weeks after the screening examination was considered a reasonable time, because all men diagnosed with AAA have completed their first visit to a vascular surgeon or an angiologist within that time. The same time limit was used for men without an AAA diagnosis, including 170 men (52 with and 118 without AAA) available for the present study, all of whom agreed to participate.

Data collection

Men participating in the study received two questionnaires, the first within 12 weeks from the screening date, T1 ($\bar{x}$5 weeks) when visiting the vascular research outpatient clinic. The second questionnaire was delivered by mail together with a prepaid envelope, 6 months after the first questionnaire was answered, T2 ($\bar{x}$30 weeks) from the screening date.

Self-reported information about risk factors and comorbidity was collected from a general health form that all screening attendees were asked to complete before screening. The general health form provides a brief history of civil status, past illness, smoking habits, place of birth, education, height, and weight. Blood pressure (BP) was collected from the research outpatient clinic visit.

Oral and written information was provided, and all attendees gave written consent before completion of the first questionnaire. Participation was voluntary and could be terminated whenever the participant desired without affecting their care. The investigation conforms to the principles outlined in the Declaration of Helsinki (Br Med J 1964; ii:177).[24] Approval for the study was provided by the Swedish Regional Ethical Review Board (Dnr 2010/239).

Instruments

The first questionnaire (T1) included the Short Form 36 Health Survey (SF-36),[25] the Hospital Anxiety and Depression Scale (HADS),[26] SOC,[20] and three questions related to stress. Men with AAA also received nine specific nonvalidated AAA questions (Table 1). SF-36; HADS; the three stress-related questions; and for the men with AAA, the nine AAA-specific questions were included in the second questionnaire (T2).

Short-form 36 health survey. SF 36 is a validated and reliable generic instrument intended to measure the view of health, physical, mental, and social functioning.[25,27] It consists of 36 items grouped into eight health dimensions: social function (2 items), mental health (5 items), role limitations-physical function (4 items), physical function (10 items), bodily pain (2 items), role limitations-emotional function (3 items), vitality (4 items), and general health (6 items). The items are coded, summed, and transformed to a scale from 0 (worst health) to 100 (best health).[25] SF-36 can also be summarized and divided in to two overarching health indexes, a physical component summary score (PCS) and a mental component summary score (MCS).[28] SF-36 has previously been used in studies concerning men's health and QOL related to aortic screening programs.[10,12,14,19]

The Hospital Anxiety and Depression Scale. The HADS is a reliable and valid instrument, and it comprises 14 statements, seven relevant to anxiety and seven relevant to depression. Each statement has four descriptors and is scored from 0 to 3, with a total score between 0 and 21 for either anxiety or depression.[26] Scores between 0 and 7 are within the normal range, 8–10 are mild, 11–14 are moderate, and ≥15 represent severe anxiety or depression.[29] The HADS has previously been used in studies on men attending aortic screening programs.[11–13,19]

Sense of coherence. SOC is a validated instrument that aims to measure a person's ability to handle stressful situations.[22,30] Antonovsky[20] developed SOC from his salutogenic model of health. The short version, including 13 items, was used in the present study. The answers are ranked from 1 to 7. A total SOC-13 score is calculated by summing all items (range 13–91), and higher scores indicate a stronger SOC.[30] SOC has previously not been found used in the context of AAA screening.