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Dietary interventions in cardiac rehabilitation – The gap between guidelines and clinical practice

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SUMMARY

Background & aims: An unhealthy diet is a risk factor for ischemic heart disease (IHD) and therefore cardiac rehabilitation (CR) should include dietary interventions. In 2007, CR became a shared responsibility between Danish hospitals and municipalities. Later, a national clinical guideline including recommendations on dietary interventions was developed to facilitate implementation of CR. The aim of the present study is: 1) To describe provision of dietary interventions in CR for IHD patients in Denmark in 2013 and 2015 emphasizing differences between hospitals and municipalities, and 2) To evaluate the implementation of the national clinical guideline in clinical practice.

Methods: A repeated nationwide cross-sectional electronic survey was carried out in 2013 and 2015. Participation was mandatory for all Danish hospital departments offering CR (n = 36), but voluntary for municipalities (n = 98) reaching response rates of 82% and 89% in 2013 and 2015, respectively.
The electronic survey covered the core components of dietary interventions in CR as described in the national clinical guideline.

Results: In 2015, 72% of municipalities provided dietary interventions. This proportion was significantly higher in hospitals (94%, p = 0.007). 26% and 38% of hospitals screened systematically for dietary intervention needs in 2013 and 2015, respectively. Corresponding results from municipalities were 26% and 29%. No significant differences were seen in clinical practice over time.

Conclusions: The results of this study identified a major gap between recommendations in the national clinical guideline and actual clinical practice on dietary interventions in CR in Danish hospitals and municipalities. The study confirmed that implementation of guidelines in clinical practice takes time and requires an intensive effort.

Abbreviations: IHD, Ischemic heart disease; CR, Cardiac rehabilitation.

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1. Introduction

Ischemic heart disease (IHD) is the leading cause of death worldwide accounting for 15% of deaths in 2015 [1]. As a major contributor to mortality and morbidity [2,3], IHD causes decreased physical function, impaired quality of life and constitutes a significant economic burden to the western health systems [4,5].

Some of the risk of IHD is related to diet [6–10]. It is estimated that the IHD mortality in Denmark may be further reduced if the population follows the public dietary recommendations [11]. This means an increased intake of fruits and vegetables, nuts, whole grain, oily fish and a reduced intake of salt and saturated fat [12–14]. These public recommendations also apply to IHD patients [13,15,16]. A Swedish cohort study (n = 17.126) found that high adherence to the Swedish public dietary recommendations, similar to the Danish [14], was associated with 32% and 27% relative risk reduction for cardiovascular events in men and women respectively [17]. While the rehabilitation phase might be a window of opportunity for motivating the IHD patient to make dietary changes towards a healthier diet, an American study with 555 participants showed that patients with IHD maintain their habitual diet unless they receive dietary interventions [18]. Furthermore, changes in dietary habits and compliance to dietary guidelines may depend on the duration and quality of the provided dietary interventions. A small Danish randomized controlled trial (n = 36) showed that two tailored sessions of 50 min with a clinical dietitian reduced fat intake by 15% and saturated fat by 25% compared to brief dietary advice that showed no changes in dietary habits [19].

In an Italian randomized controlled trial (n = 160), all patients attended two 1-h nutritional education meetings, one led by a dietitian and one led by an endocrinologist, and a multidisciplinary educational meeting on risk factors for cardiovascular disease. In addition to this, the intervention group received a personalized nutritional counselling session with a clinical dietitian after 6 months. While body weight and intake of energy, alcohol, fat and carbohydrates were reduced in the intervention group after 12 months, no changes were seen in the control group [20]. Other studies [21–29] have shown that dietary interventions in cardiac rehabilitation (CR) result in improvements in self-reported dietary habits with increased intake of fish [21,28], vegetables [22,24,28] and fibres [21,22], reduced intake of total fat [24,28] and saturated fat [22,24,27] and improved overall diet assessed by various diet index scores [23,25,26,28]. Hence, dietary interventions should be a component of CR.

The World Health Organization encourages community based outpatient health services, as the proximity to the patient may improve adherence among vulnerable patients and decrease the risk of social inequality in health [30,31]. Until 2007, outpatient CR in Denmark was offered only at a regional level (responsible for hospital management). Due to a political structural reform in 2007, outpatient CR became a shared responsibility between the hospitals and the municipalities (responsible for the community level rehabilitation services) [32]. A common concern was the risk of the hospitals minimizing their CR without the municipalities being ready to take over [33]. A survey mapping in 2011 showed that only 54% of the Danish municipalities provided CR [34]. To facilitate implementation of CR and to improve the quality of CR in Danish hospitals and municipalities, a national clinical guideline including core components such as diet and physical activity was developed in 2013 on the initiative of The Danish Health Authority [13]. However, clinical guidelines have little effect unless implemented in clinical practice and this can be challenging [35,36]. Hence, guidelines' impact on the quality of health services should always be monitored [37]. Based on a unique national dataset [38], the aim of the present study was two-fold: 1) to describe the currently provided dietary interventions in CR for IHD patients in Denmark on a structural level, with emphasis on the differences between hospitals and municipalities and on the development in clinical practice from 2013 to 2015, and 2) to evaluate whether clinicians have implemented the national clinical guideline within the area of clinical nutrition.

2. Materials and methods

The study is based on data from a repeated nationwide cross-sectional electronic survey carried out in 2013 and 2015. All Danish hospital departments offering CR (n = 36) and all Danish municipalities (n = 98) were invited to participate [39].

Data regarding dietary interventions in the hospitals' CR were derived from the Danish Cardiac Rehabilitation Database, which routinely collects data on CR programs in Denmark using electronic questionnaires [38]. National data on CR at municipality level are not routinely collected but a separate, parallel electronic survey covering all the Danish municipalities was undertaken in 2013 with follow-up in 2015 [39].

The electronic questionnaires sent to the hospitals were based on a previously tested and applied version [40] and were modified to cover core components of the recommendations in the national clinical guideline. The questionnaires consisted of four separate questionnaires covering the different profession areas in the multidisciplinary CR team: physician, nurse, clinical dietitian and physiotherapist [39]. The present study only includes data from the clinical dietitian questionnaire. The clinical dietitian questionnaire covered the national clinical guideline recommendations on the organization and mode of delivery of dietary interventions in CR, Table 1. The national clinical guideline recommends that patients with IHD undergo initial assessment regarding the need for dietary interventions, and that patients with identified needs are offered dietary treatment [13]. It suggests that the systematic evaluation of dietary habits and the screening for dietary intervention needs is performed with HeartDiet, a Danish food frequency questionnaire validated in patients with IHD [41]. The dietary treatment can be offered as individual consultations or group sessions and may be supplemented with practical training e.g. cooking classes. The national clinical guideline does not specify which health professionals should carry out the interventions [13], however the only health professionals in the Danish health system authorized to perform dietary treatment are clinical dietitians. For this reason, a question on which health professionals are involved in the dietary interventions is included in the questionnaire. According to the national clinical guideline, it is good practice to consider the participants motivation and barriers to participation and adherence to

Table 1
Core components of the electronic questionnaire on dietary interventions in cardiac rehabilitation sent to Danish hospitals and municipalities in 2013 and 2015.

Core component
Dietary interventions are a component of cardiac rehabilitation
Clinical dietitians are a part of cardiac rehabilitation teams
Systematic screening for dietary intervention needs
- Systematic screening with HeartDiet
- Systematic screening with Diet History Interview
- Systematic screening with Food Records
- Systematic screening with other tools
Mode of delivery of the provided dietary interventions in cardiac rehabilitation
- Individual counselling by clinical dietitian
- Group sessions by clinical dietitian
- Group sessions by other health professional
- Practical training by clinical dietitian
- Practical training by other health professional
Socially differentiated dietary interventions in cardiac rehabilitation

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