The use of clinical guidelines during the treatment of diabetic foot ulcers in four Nordic countries

INTRODUCTION

Since 2003 clinical guidelines disseminated aimed at the reduction of the rates of amputation and ulceration of the diabetic foot. A guideline has no value until after it has been implemented. This study aimed to explore this implementation in four Nordic countries.

BACKGROUND

Limb amputation is a common complication of diabetes mellitus. Every 30 seconds, a limb is lost due to diabetes somewhere in the world.[1] To reduce the number of amputations, multidisciplinary teams have developed treatment strategies that have proven good results in healing and in reduced amputation rates.[2,3] The first guidelines for the prevention and treatment of the diabetic foot were developed and published by the International Working Group of the Diabetic Foot in 1999. The guidelines were updated in 2003, 2007, and 2011.[2,4,5] In the Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden), the International Working group recommendations have been incorporated into different guidelines. In Sweden, the first National Guidelines of Diabetes Care was published in 1999,[6] and was updated in 2010 and 2015;[7,8] multi-disciplinary team management of the diabetic foot is included in this publication. After careful assessment, similar guidelines were published in 2009 in Norway and Finland,[9,10] and in 2013 in Denmark.[11] At the time of this survey, Iceland had no national diabetes care guidelines and was not included in this study.

A guideline is of interest only when it is implemented in clinical practice. This study aimed to explore implementation of guidelines for the prevention and treatment of the diabetic foot in Denmark, Finland, Norway, and Sweden.

METHODS

During 2014, a web-based questionnaire was developed on behalf of the Nordic Diabetic Foot Task Force that explored the use of guidelines for the treatment of diabetic foot ulcers. It consisted of a) general questions regarding the health care setting of the respondents, and b) specific questions regarding the use of guidelines (i.e., Does your work place use any guidelines when referring patients with diabetes and a foot ulcer? If yes, which guideline? Please comment). The questionnaire was distributed electronically to all of the members of national associations of diabetes specialist nurses, wound care nurses, diabetologists, and endocrinologists, and to all hospitals in the included countries.

The questionnaire was sent to all known hospitals in Sweden via the Swedish Diabetes Nurses Association. In the other countries, it was distributed through the national wound organisations and the Nordic Task Force members.

The response rate was N=601 completed questionnaires (Denmark, n=119; Finland, n=76; Norway, n=192; Sweden, n=214). The results were not considered conclusive or representative because there were no data regarding which of the contacted clinics were actually treating diabetic food ulcer patients. Descriptive statistics were used for the analysis. Content analysis was used to analyse the free text answers.

THE NORDIC DIABETIC FOOT TASK FORCE

The Nordic Diabetic Foot Task Force is a multidisciplinary network of national and international wound-care clinicians. This unique collaboration promotes the systematic implementation of guidelines for diabetic foot care in the Nordic countries. The Task Force aims to initiate and support various activities at the national level that can improve the implementation of recommended guidelines and the treatment of patients in clinical practice (www.nordicdiabeticfoot.com).

Magdalena Annersten Gershater and Nordic Diabetic Foot Task Force (Chair Klaus Kirketerp-Møller, Denmark, Vesa Juutilainen, Finland, Tore Julsrud Berg, Norway, Magnus Löndahl, Sweden)

Magdalena Annersten Gershater
Senior Lecturer
Malmö University
Faculty of Health and Society Department of Care Science
206 05 Malmö, Sweden

Correspondence: magdalena.gershater@mah.se

Conflicts of interest: None

RESULTS

The current work place categories described by the respondents were hospitals/specialist care (n=311, 52%), primary care (n=155, 26%), home nursing settings (n= 66, 11%), other (n= 67, 11%), or no response (n=2). A total of 517 (86%) of the respondents worked with diabetes foot patients at the work place; 167 (33%) respondents worked at a specialist centre for diabetic foot ulcer treatment. The patients were referred to the respondents by general practitioners (n=393, 65%), nurses in home nursing organisations (n= 284, 47%), other departments in the same hospital (n=278, 46%), specialist physicians (n=200, 33%), other hospitals in the region (n= 196, 33%), private chiropodists (n=134, 22%), or other hospitals outside the region (n=60, 10%). This referral question was not answered by 107 (18%) respondents. Regular foot screening of diabetes patients was performed by 312 (52%) of the respondents; 144 (24%) did not perform screening and 145 (24%) respondents did not answer this question. The results for the list of professions that participated in the treatment of the diabetic foot are presented in Table 1.

Does your work place use any guidelines when referring patients with diabetes and a foot ulcer? If yes, which guideline?

Yes (n=233, 39%)

No (n=209, 69%)

No answer (n=159, 26%).

International guidelines were mentioned by 8, national guidelines by 26, regional guidelines by 31, and local guidelines by 22, respondents.

Comments from Denmark:

"New regional guidelines are under development."

"I don´t know if we have any guidelines."

Comments from Finland:

"We use recommendations from the diabetes foot team."

"We follow the internal working group's recommendations."

"It is my own professional responsibility."

Comments from Norway:

"We have no guidelines."

"I don´t know if we have any guidelines."

"The guidelines have expired."

"New guidelines are under development."

"We have no foot team to refer to."

"No one is responsible for the patients."

"It works well! A good tool for guidance!"

Comments from Sweden:

"There is a need for individualised assessments."

"There is a need for simpler guideline following the patient´s care chain."

"The regional guidelines have expired, new guidelines are under development."

"We have no foot team to refer to."

"I don´t know if we have any guidelines."

"We have no guidelines."

"It works well!"

TABLE 1. PROFESSIONS PARTICIPATING IN THE TREATMENT OF THE DIABETIC FOOT (N=366 RESPONDENTS).

PROFESSION	ALWAYS IN THE TEAM	AVAILABLE NEARBY	EXTERNAL CONSULTANT	NEVER
Endocrinologist/diabetologist	148	65	82	71
General Surgeon	47	68	116	135
Vascular Surgeon	53	78	188	47
Orthopaedic Surgeon	121	65	135	45
Podiatrician	25	9	63	269
Chiropodist	201	34	91	40
Diabetes Specialist Nurse	179	97	49	41
Orthopaedic Technician	89	54	165	58
Dermatologist	20	38	165	143
Infection medicine specialist	38	101	138	89
Microbiologist	12	61	159	134
Plastic surgeon	19	39	138	170
Wound care Nurse	188	55	42	81
Other	41	33	76	216

DISCUSSION

The results of this study indicated that guidelines for the treatment of the diabetic foot have not been implemented in clinical practice in the Nordic countries. Only 39% of the respondents used guidelines. After more than 15 years after the introduction of the first international guideline, not all of the hospitals in the four countries have organised diabetic foot clinics. Health care professionals who cared for persons with diabetes and foot did not know where to refer patients. This situation is unsatisfactory. These four countries have well-developed health care organisations. The responsibility for development of diabetes foot centres should be assumed by these organisations. A reduction in numbers of amputations in patients with diabetes can be achieved via structured treatment strategies implemented by multi-disciplinary teams.[2,3] During the last 10 years, the Nordic health care organisations have used time and resources for other areas of the health care instead of implementing the international guidelines. This prioritisation of funding is questionable because the financial costs of a major amputation are many times greater than the costs of primary healing without amputation.[12]

The study revealed that there was an alarming lack of awareness of the existing guidelines. Evidence-based care is fundamental to all health care education. International and national guidelines have been developed to facilitate continuous updating of the care process for this vulnerable patient group, and for other patients. The individual health care professional has a responsibility to maintain and develop professional skills and follow developments in the area. However, the caregiver/employer should facilitate professional development and organise the work setting so that guidelines can be implemented. Previous studies of the implementation of evidence-based care in clinical practice have revealed that this complex process is affected by organisational- and individual-level factors.[13] Properties of the new method to be implemented can present obstacles. In the guidelines to reduce ulceration and amputation of the diabetic foot, the "new" method is mainly to systematically apply current techniques and existing methods through collaboration of multi-disciplinary teams. Characteristics of the health care professionals using the new method could also present other obstacles. Team members may have different levels of knowledge and of resistance to change. It is the manager's responsibility to organise the work in teams and to motivate and educate reluctant team members. The context of the implementation is crucial. The guidelines must be adapted to different health care settings and organisations, and in different leadership climates and management cultures. Managers and leaders must have the knowledge, skills, and abilities necessary to create a workplace culture that uses evidence-based knowledge. A good management has well-developed routines for communication with the health care professionals. Motivated staff also demand receipt of updated guidelines in their daily clinical practice. Leadership skills that promote successful implementation include giving feedback and emphasis on evidence-based work. A financial model that promotes care provided according to guidelines could be used as an incentive at the "floor level" in the clinic and at a higher level. Centres of excellence could be used as examples for other clinics to appreciate and imitate. Time, education, perception, and equipment resources should be prioritised and allocated, and outdated methods and routines should be removed.

METHODOLOGICAL CONSIDERATIONS

The survey was sent to all hospitals in the four countries because there were no national registries of diabetic foot clinics. The low response rate might have been due to a lack of specialist clinics for diabetic foot treatment and because hospitals without a foot clinic might have decided to not respond to the survey. The guidelines were not well-known among even one-half of the respondents who worked in hospital/specialist care. The free text responses indicated that the questions were difficult to understand. This result suggested that many of the respondents were not familiar with evidence-based guidelines. The results of previous studies have indicated that most patients with diabetes and a foot ulcer receive daily care from health care professionals in primary care practice or who are employed by home nursing organisations.[14] These settings are seldom included in implementation of clinical guidelines because these individuals perform their work far from the hospitals. The implementation of evidence-based guidelines should occur in all health care settings that treat patients with diabetes and at risk for, or with, foot ulcers. Achievement of this goal requires updated evidence-based education for all health care professionals caring for these patients. Future studies should explore knowledge and strategies for implementation of guidelines for individuals with formal leadership responsibilities in settings where persons with diabetes and foot ulcers receive care.

IMPLICATION FOR CLINICAL PRACTICE

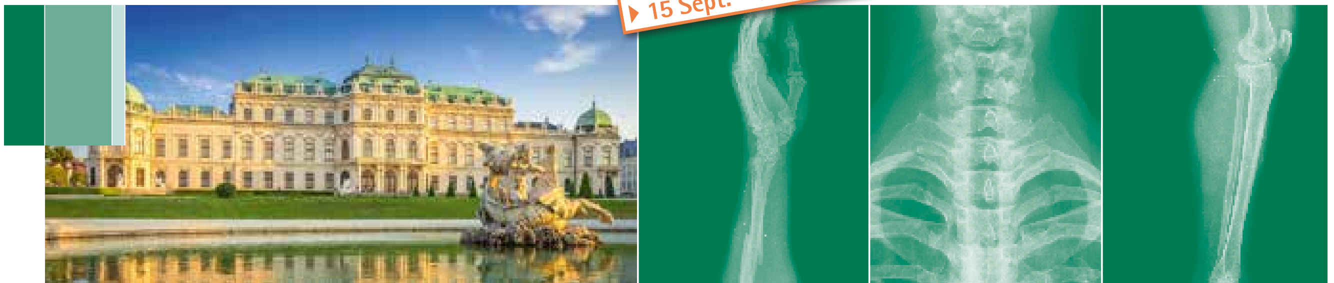
Clinical leaders should assume responsibility for the implementation of clinical guidelines for the treatment of the diabetic foot. The documents are available and systematic follow-up of the quality of care in this area via the use of local registers of treatment outcomes and of national amputation registers should be implemented.[15] ■

REFERENCES

1. Boulton AJM, Vileikyte L, Ragnarson Tennvall G, Apelqvist J. The global burden of diabetic foot disease. The Lancet 2005; 366(9498):1719-1724.
2. Bakker K, Apelqvist J, Schaper NC. International Working Group on the Diabetic Foot. International Consensus on the Diabetic Foot & Practical Guidelines on the Management and Prevention of the Diabetic Foot. Diabetes Metab Res Rev 2011;16 (Suppl 1):84-92
3. Apelqvist J, Larsson J. What is the most effective way to reduce incidence of amputation in the diabetic foot? Diabetes Metab Res Rev 2000;16(1):75-83.
4. Apelqvist J, Bakker K, van Houtum WH, Schaper NC. Practical guidelines on the management and prevention of the diabetic foot: based upon the International Consensus on the Diabetic Foot (2007) Prepared by the International Working Group on the Diabetic Foot. Diabetes Metab Res Rev 2008;24 (Suppl 1):181-7
5. Apelqvist J, Bakker K, Houtum WH, Nabuurs-Franssen MH, Schaper NC International consensus and practical guidelines on the management and the prevention of the diabetic foot. Diabetes Metab Res Rev 2000;16 (suppl 1):84–S92
6. Socialstyrelsen. Nationella riktlinjer för vård och behandling vid diabetes mellitus. Stockholm: Socialstyrelsen; 1999.
7. Socialstyrelsen. [Internet] Nationella riktlinjer för diabetesvården 2010 – Stöd för styrning och ledning. Stockholm: Socialstyrelsen; 2010. [September 2016] Available from: http://diabetes.se/Page-Files/1222/2010-2-2.pdf
8. Socialstyrelsen. [Internet] Nationella riktlinjer för diabetesvård - Stöd för styrning och behandling. Stockholm: Socialstyrelsen; 2015. [September 2016] Available from: http://www.socialstyrelsen.se/Lists/Artikelkatalog/Attachments/19689/2015-2-3.pdf
9. Helsedirektoratet. Nasjonale faglige retningslinjer Diabetes Forebyggning, diagnostikk og behandling.; 2009.
10. Current care guidelines. [Internet] Diabeetikon jalkaongelmat. The Finnish Medical Society (Suomalainen Lääkäriseura Duodecim). Guideline ed.; 2009. Available from: http://www.kaypahoito.fi/web/kh/suositukset/suositus?id=hoi50079#suositus; (11) Sundhedsstyrelsen. National klinisk retningslinje for udredning og behandling af diabetiske fodsår. ; 2013.
12. Prompers L, Huijberts M, Schaper N, Apelqvist J, Bakker K:E,M., Holstein P, et al. Resource utilisation and costs associated with the treatment of diabetic foot ulcers. Prospective data from the Eurodiale Study. Diabetologia 2008;51(10):1826-34.
13. Grol R, Grimshaw J. From best evidence to best practice: effective implementation of change in patients' care. The Lancet 2003;362(9391):1225-30.
14. Gershater MA, Pilhammar E, Alm Roijer C. Documentation of diabetes care in home nursing service in a Swedish municipality: a cross-sectional study on nurses' documentation. Scand J Caring Sci 2011;25(2):220-6.
15. Amputations- och protesregistret för nedre extremiteten [Internet] http://swedeamp.com/

18th EFORT Congress 2017

www.efort.org/vienna2017



18th EFORT Congress

Vienna, Austria: 31 May–02 June 2017

#EFORT2017

Main Theme:

Sports Activities & Orthopaedic Practice

Submit your abstract:

www.efort.org/abstract2017

Key dates

- Abstract submission & registration open: 15 September 2016
- Abstract submission closes: 13 November 2016 23:59 CET
- Early registration deadline: 27 February 2017
- On-site rates apply: 03 May 2017