

PEER SUPPORT AS PART OF SCALING-UP INTEGRATED CARE IN PATIENTS WITH TYPE 2 DIABETES AND ARTERIAL HYPERTENSION AT THE PRIMARY HEALTHCARE LEVEL: A STUDY PROTOCOL

LAIČNA PODPORA KOT NADGRADNJA CELOSTNE OSKRBE BOLNIKOV S SLADKORNO BOLEZNIJO TIPA 2 IN ARTERIJSKO HIPERTENZIJO NA PRIMARNI ZDRAVSTVENI RAVNI: PREDSTAVITEV PROTOKOLA RAZISKAVE

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ABSTRACT

Keywords:

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Introduction: Type 2 diabetes (T2D) and arterial hypertension (AH) are among the greatest challenges facing health systems worldwide and require comprehensive patient-centred care. The key to successful management in chronic patients is self-management support, which was found to be only weakly implemented in Slovenia. The aim of the study is to develop an evidence-based model of peer support for people with T2D and AH at the primary healthcare level in Slovenia, which could represent a potential solution for upgrading integrated care for these patients.

Methods: A prospective interventional, mixed-methods pilot study will begin by recruiting approximately 40 eligible people with T2D and AH through purposive sampling. The participants will receive structured training, led by a specialist nurse, to become trained peer supporters. Each will voluntarily share their knowledge and experience at monthly group meetings with up to 10 people with T2D and AH over a three-month period in the local community. Data will be collected through interviews and focus groups and questionnaires about socio-demographic and clinical data, knowledge about T2D and AH, participants' quality of life, level of empowerment and acceptability of the intervention.

Expected results: The study will provide an evidence-based model for integrating peer support into the local community. It is expected that the intervention will prove feasible and acceptable with educational, psychosocial and behavioural benefits.

Conclusion: Peer support through empowerment of people with T2D and AH, family members and other informal caregivers in the local community could scale-up the integrated care continuum and contribute to sustainability of the healthcare system.

IZVLEČEK

Ključne besede:

sladkorna bolezen tipa 2
arterijska hipertenzija
laična podpora
opolnomočenje
integrirano primarno zdravstveno varstvo

Izhodišča: Sladkorna bolezen tipa 2 (SB) in arterijska hipertenzija (AH) predstavljata enega največjih izzivov, s katerimi se soočajo zdravstveni sistemi po vsem svetu, in zahtevata kakovostno, multidisciplinarno in na bolnika osredotočeno obravnavo. Izkazalo se je, da je v Sloveniji področje opolnomočenja za samooskrbo bolniki le šibko implementirano. Ena od možnih rešitev, kako nadgraditi obstoječi model celostne oskrbe kroničnih bolnikov s SB in AH, je uvedba in ustrezna organizacija laične podpore. Ključne naloge usposobljenih oseb, ki bodo nudile laično podporo, so: pomoč in svetovanje pri odločitvah v vsakdanjem življenju, čustvena in socialna podpora, povezava z zdravstvenim sistemom in njenimi strokovnjaki ter stalna in vseživljenjska podpora.

Metode: Prospektivna intervencijska pilotna raziskava se bo pričela z vključitvijo približno 40 posameznikov s SB s sočasno prisotno ali brez AH z uporabo namenskega vzorčenja. S pomočjo strukturiranega izobraževalnega programa, ki ga bo vodila izobraževalka s kompetencami diplomirane medicinske sestre s specialnimi znanji, bodo ti bolniki znanji bodo ti bolniki postali usposobljene osebe za nudenje laične podpore drugim bolnikom s SB s sočasno prisotno AH ali brez. V obdobju 3 mesecev se bodo enkrat mesečno prostovoljno sestali s skupino približno 10 bolnikov in z njimi podelili svoje znanje in izkušnje. Udeleženci bodo izpolnili vprašalnike o sociodemografskih in kliničnih podatkih, poznavanju SB in AH, kakovosti življenja in stopnji opolnomočenosti ter sprejemljivosti intervencije. Za namen kvalitativne analize bodo opravljeni intervjuji in fokusne skupine z udeleženci.

Pričakovani rezultati: Raziskava bo omogočila razvoj znanstveno utemeljenega modela laične podpore za bolnike s SB in AH na primarni zdravstveni ravni. Podana bodo nova znanja o vlogi laične podpore in posebej usposobljenih oseb. Pričakovati je dobro sprejemljivost in izvedljivost te kompleksne zdravstvene intervencije, katere doprinos bodo izobraževalne, psihosocialne in vedenjske koristi za te bolnike.

Zaključek: Laična podpora lahko z večjo opolnomočenostjo bolnikov in vključenostjo družinskih članov ter oskrbovalcev v lokalni skupnosti prispeva k prihodnji organizaciji in nadgradnji celostne oskrbe bolnikov s SB in AH na primarni zdravstveni ravni v Sloveniji in drugih okoljih s podobno ureditvijo. Zaradi pomanjkanja zdravstvenega kadra lahko takšen prenos odgovornosti za zdravje v vertikalni smeri navzdol na bolnike in oskrbovalce prispeva k vzdržnosti zdravstvenega sistema.

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1 INTRODUCTION

Type 2 diabetes (T2D) and arterial hypertension (AH) are serious health problems worldwide (1, 2), and their combined prevalence is estimated to range from 4.5% (2) to 17% (3). It is known that up to 73.8% of people with T2D have concomitant AH (4), and therefore complex prevention, treatment and control of both diseases must be simultaneous (1, 4). The two diseases are closely related because of common risk factors that lead to the development of cardiovascular complications, morbidity and premature mortality (1, 5, 6). To improve the quality of care for patients with chronic diseases in Slovenia, new models have been introduced in primary care, striving for a holistic, patient-centred and multidisciplinary care (7-11).

Patient empowerment is one of the fundamental principles in promoting and strengthening health and, in the context of chronic disease management, means successful self-management and self-care leading to a better quality of life (5). Comprehensive care for people with T2D and AH should be accessible, connective, efficient, safe and lifelong quality care that actively involves the patient in decision-making (6).

Nowadays, there is still a lack of optimal care for chronically ill patients, especially for members of vulnerable groups (6). Research in Slovenia discovered that one possible cause of this is the low level of patient empowerment and suboptimal implementation of teamwork and coordinated care, which must approach the patient and move from healthcare institutions to each patient's local and home environment (12, 13). Primary healthcare in Slovenia needs improved measures to support self-management of chronically ill patients (13). We know that maintaining a patient's continued ability for self-care is a task that goes beyond the capabilities of the healthcare system and healthcare professionals, and partners outside the system can make a significant contribution to this (5,14). One of the possible solutions to upgrade the existing model of integrated care for Slovenian people with T2D and AH is the introduction of voluntary peer support by properly trained lay individuals who do not have professional medical education, thus empowering patients, family members and informal caregivers in the local community (13).

The role of a peer supporter is to complement and strengthen health services by providing practical help in daily management, creating a stimulating emotional and social environment, and ongoing support to assist with the lifelong needs of disease self-care management (15, 16). Peer supporters are particularly important in improving the quality of life of individuals with the same chronic disease, with whom they can share their knowledge and similar experiences, including those that healthcare professionals do not have, without any linguistic or cultural

barriers between them (14-17). The general problem with previous research is a lack of effective educational models for training of peer supporters (18-20) and also a lack of standardisation in the methodology and implementation of providing peer support (17, 21). Despite the availability of the basic materials for the operation of peer supporters in Slovenia (14, 22), this form of cooperation among patients, healthcare institutions and the local community has not yet been established. The proper education, training and organisation of peer supporters and their activities are necessary to ensure effective implementation of a peer support model.

The primary objective of this study is to develop an evidence-based model of peer support for people with T2D with or without coexisting AH at the primary healthcare level in Slovenia. The secondary objectives are to evaluate the role of peer support by introducing trained peer supporters, to determine the relations between peer support and patient-reported quality of life and level of empowerment, and to assess the acceptability and feasibility of the intervention.

2 METHODS

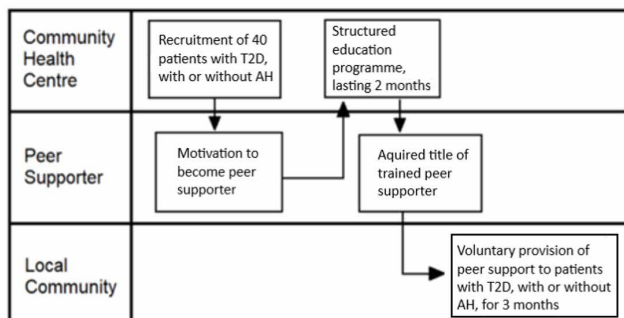
2.1 Study design and settings

A prospective interventional, mixed-methods pilot study, incorporating quantitative and qualitative methodology, will be conducted. Research will last from May 2021 to June 2023 in the Community Health Centre (CHC) Ljubljana and CHC Slovenj Gradec.

2.2 Participants and recruitment

Through purposive sampling, registered nurses and family medicine physicians will recruit approximately 40 eligible individuals with T2D, with or without coexisting AH, from CHC Ljubljana and CHC Slovenj Gradec who are interested in serving as volunteer peer supporters. These individuals will be deemed suitable for the role based on their good understanding of their own health condition and its management, responsibility, confidence, communication skills, ability to maintain appropriate boundaries and continuously collaborate with a mentor-educator from the CHC. Once peer supporters complete a structured education programme, they will become trained peer supporters who will share their knowledge and experience with approximately 10 patients with the same chronic condition in their local area. This means that up to 400 patients could be supported by peer supporters (Figure 1). Participation in the study will be voluntary. All participants will receive an explanation of the study's objectives and a participant information sheet that provides additional information. To participate in the study the participants must sign an informed consent form.

The inclusion criteria for participants will be: confirmed diagnosis of T2D (23) with or without co-existing AH (24), for at least one year. The exclusion criteria will be: type 1 diabetes or gestational diabetes, <18 years of age, cognitive impairment.



Legend: T2D - type 2 diabetes; AH - arterial hypertension

Figure 1. Schematic presentation of the pilot study.

2.3 Intervention

2.3.1 Structured education programme for peer supporters

Peer supporters will be trained for two months, a total of 15 hours, to provide voluntary support to other people with T2D, with or without coexisting AH. Two group trainings and two individual meetings will be organised to empower peer supporters and equip them with comprehensive knowledge of T2D and AH, the skills to manage their disease and communication skills to effectively deliver peer support.

The training will take place in small groups of six to 10 candidates, led by one educator who has the competence of a registered nurse with special knowledge, and thus is internationally recognised as a specialist nurse. The training will be conducted in accordance with T2D education (25), treatment (23) and nutrition and physical activity guidelines (26). To ensure a reproducible training programme, each educator will lead the structured training based on the comprehensive professional teaching preparation. As didactic teaching material for group work, the educator will use four posters from the Conversation Map™ collection. This tool was developed in collaboration with the International Diabetes Association to facilitate diabetes self-management through a patient-centred approach and is associated with better glycaemic control (27).

In the first workshop, participants will engage in a conversation and share experiences about T2D and a healthy lifestyle. The discussion will cover feelings and emotions, disease management, active living and connecting with healthcare professionals, friends and family. At the end of the meeting, candidates will receive

an appointment for the second meeting to discuss acute and chronic complications of T2D and self-management of T2D and AH. The focus will be on proper measurement of blood pressure and blood glucose, self-examination of the feet (feeling the pulse, checking sensations), proper foot care and purchasing appropriate footwear. While discussing hypoglycaemia, its signs and causes, they will analyse their self-monitoring diary of blood glucose and blood pressure. After the second workshop, the candidate will have two one-on-one meetings with the educator. The focus will be on analysing the daily food intake and composition of a menu, reviewing the self-monitoring diary, assessing the knowledge acquired and discussing the objectives of voluntary peer support, the role of a trained peer supporter, opportunities for organising peer group meetings and ways for further cooperation between healthcare professionals, patients and the local community. Throughout the training the educator will teach peer supporters how to communicate assertively and use motivational and coaching techniques to approach volunteering and working with people.

After the 15-hour training, an award ceremony will be organised, where each participant will receive four different Conversation Map™ posters, an honorary certificate of the acquired titles of “trained peer supporter” and “CHC ambassador” to recognise the completion of the training and to acknowledge the participants’ efforts.

2.3.2 Providing peer support

After completion of the educational programme, trained peer supporters will voluntarily provide support, encouragement and information to patients with T2D, with or without coexisting AH. Each peer supporter will organise three monthly meetings of 60 minutes or more for a group of 10 patients in the local community (at the premises of the CHC or a library, intergenerational centre, diabetic societies and associations, home environment, etc.). Patients’ relatives (including groups in which grandparents and grandchildren are present to encourage intergenerational cooperation) and caregivers can also be present at peer support meetings to receive resources to help support their loved ones. With the help of four Conversation Map™ posters the participants will be able to talk about the disease in a relaxed atmosphere, share their stories, knowledge and experiences, emphasise the importance of medical adherence, a healthy lifestyle and regular check-ups with healthcare professionals, and establish contacts and friendships for further mutual support in coping with the burdens of T2D and AH. Ongoing consultations with the mentor-educator will occur throughout the intervention, either in person, by phone or by email. If peer supporters encounter difficulties in organising the meetings, the educator will help them find people or meeting locations.

2.4 Instruments and data collection

We will observe variables from different categories (Table 1). Qualitative data will be gathered through interviews and focus groups, while quantitative data will be collected using questionnaires, which will be completed by i) peer supporters, namely upon entry in the study and after completion of the educational programme, and ii) patients, namely upon entering the research and after the third meeting with a trained peer supporter.

2.4.1 Behavioural risk factors

Physical activity will be assessed by weekly physical activity duration of high- or moderate-intensity. More than 150 minutes of moderate-intensity or more than 75 minutes of high-intensity physical activity per week or physical activity at least three to five times a week for at least 30 minutes will be considered adequate (26).

Eating habits will be assessed using a structured questionnaire regularly used in Slovenian family medicine practices to determine the daily number of meals, frequency of vegetable consumption, salting food at the table and type of fat intake. According to current guidelines, it is recommended that individuals with T2D follow a balanced diet, similar to what is recommended for the general population (26).

Alcohol use will be assessed with the AUDIT-C questionnaire. We will use the Slovenian validated version, in which a total of six points or more for men and five points or more for women means there is an increased risk of developing social and health problems due to drinking alcohol (28).

2.4.2 Quality of life

The quality of life of patients with T2D will be assessed using the Appraisal of Diabetes Scale (ADS), which is considered as a reliable and validated tool. ADS tests an individual's ability to identify the psychological burden of the T2D and the ability to manage the disease. Participants will rate each of seven statements on a five-point Likert scale. The smaller the total score, the more positive the appraisal strategy (29).

2.4.3 Empowerment of patients

The Diabetes Empowerment Scale (DES) is a validated and reliable measure of diabetes-related psychosocial self-efficacy. It consists of 28 statements divided into three subscales: i) managing the psycho-social aspects of the T2D, ii) assessing dissatisfaction and readiness to change, and iii) setting and achieving T2D goals (30). For each statement, participants will rate their degree of agreement on a five-point Likert scale.

Table 1. Study data collection list.

CATEGORY	DATA VARIABLE	MEASUREMENT DESCRIPTION
Demographic data	Age	Years
	Gender	Male/female
	Education	Primary school, secondary or vocational school, higher vocational college, university education, master's/doctoral degree
	Marital status	Married, divorced, widowed, single
	Employment status	Employed, unemployed, retired
Clinical history	Duration of T2D and/or AH	Years
	Therapy for T2D and AH	Name of the drug and dose
Behavioural risk factors	Smoking	Yes/no
	Physical activity	Adequate/inadequate
	Eating habits	Healthy/unhealthy
	Alcohol use	Score on the AUDIT-C questionnaire
Quality of life of patients with T2D	Quantitative	Score on the ADS
	Qualitative	Analysis of interviews and focus groups
Empowerment of patients with T2D	Quantitative	Score on the DES
	Qualitative	Analysis of interviews and focus groups
Acceptability of the intervention	Quantitative	Score on questionnaire, based on TFA
	Qualitative	Analysis of interviews and focus groups
Knowledge about T2D	Quantitative	Score on the DKT
Knowledge about AH	Quantitative	Score on the HKT
Attitudes towards peer support intervention	Qualitative	Analysis of interviews and focus groups

Legend: AH - arterial hypertension; T2D - type 2 diabetes; AUDIT-C - Alcohol Use Disorders Identification Test; ADS - Appraisal of Diabetes Scale; DES - Diabetes Empowerment Scale; TFA - Theoretical Framework of Acceptability; DKT - Diabetes Knowledge Test; HKT - Hypertension Knowledge Test

2.4.4 Acceptability of the intervention

Sekhon et al. developed the Theoretical Framework of Acceptability (TFA) to assess the acceptability of the healthcare intervention. This tool describes seven different domains of acceptability: affective attitude, burden, ethicality, intervention coherence, opportunity costs, perceived effectiveness and self-efficacy (31). We will use a 19-item scale, developed by Timm (32), covering all seven domains of acceptability based on the TFA. Participants will rate their degree of agreement on five-point Likert scale.

2.4.5 Knowledge about AH and T2D

We will only be interested in the acquired knowledge of the peer supporters and not in that of the patients. The knowledge of peer supporters about AH and T2D will be compared upon entry in the study and after completion of the educational programme.

The Hypertension Knowledge Test (HKT) is a valid and reliable tool that was developed by Han et al. (33). We will use the validated Slovenian version of the HKT, which consists of 11 true/false statements covering general knowledge about AH, incidence, signs and causes (34).

We will use an internationally known, valid and reliable Diabetes Knowledge Test (DKT) (35), that was translated into Slovenian and validated by Turk et al. (36). The DKT consists of 23 general items about diet, management and complications of T2D. The first 14 items are appropriate for people who do not use insulin (36), and therefore for the purposes of the study these items will be used in the questionnaire.

2.5 Statistical analysis

We will summarise categorical variables with frequencies and percentages, and numerical variables with means and SDs or medians and IQRs in the case of asymmetric distributions. To compare numerical variables within groups, we will use a paired samples t-test or Wilcoxon signed-rank test (in the case of asymmetric distributions). A p-value of <0.05 will be considered as statistically significant.

To estimate the power of the research for the ADS and DES scores, we conducted power analysis using two-tailed paired samples t-test using the PASS 14 software. For the ADS score, a planned sample size of 256 patients (considering a 20% dropout rate for peer supporters and patients) achieves 80% power to detect a mean difference (between pre- and post-intervention) of 1.6 if the standard deviation of differences is 9.3 (representing the largest possible standard deviation if the differences in ADS scores are normally distributed, as their range is at most [-28,28]). Similarly, we will detect a mean difference of 0.2 in DES score if the standard deviation of differences is 1.3 (as the range of DES differences is at most [-4,4]).

2.6 Qualitative analysis

To assess experiences, attitudes towards peer support, and suggestions for future improvements, focus groups and interviews with peer supporters and patients-recipients of the support will be undertaken. Audio recordings will be transcribed and later rechecked for accuracy. The analysis will be performed with the QRS NVivo software. We will use an inductive approach to content analysis. Two independent researchers will analyse the data in three steps: open coding, formation of themes and subthemes (grouping categories into higher-order headings), and abstraction (formulating a general description of the research themes). Disclosure of both qualitative analysis and triangulation with a qualitative research expert will then follow. The number of studied units will be determined by inductive thematic saturation (37). Data sufficiency will be reached when no additional idea will occur from the data.

3 DISCUSSION

3.1 Expected results

This will be the first research in Slovenia to evaluate the role of peer support for patients with T2D and AH at the primary healthcare level in Slovenia. We expect that the proposed education programme will prove to be feasible and acceptable, and will enable peer supporters to gain knowledge about T2D and AH. The purpose of the training is to equip peer supporters with self-management and communication skills so they can help patients by sharing experience, solving problems, raising knowledge, promoting a healthy lifestyle, and strengthening connections with the health system and community resources (15, 17). Trained peer supporters will be CHC volunteers and ambassadors. They will collaborate with healthcare professionals, patients with T2D and AH, and people or institutions in the local community (intergenerational centres, libraries, nursing homes, patient associations and so on). By transferring health competences and responsibility from healthcare professionals to patients, such an intervention has the potential to contribute to the sustainability of the healthcare system, particularly in the face of the current shortage of healthcare professionals (11).

We expect that peer support for patients with T2D, with or without coexisting AH, will prove to be a feasible and acceptable intervention with educational, behavioural, and psycho-social benefits. The unique quality of mutual assistance, in which peer support providers share the experience of the same chronic disease with the recipients of support, allows patients to better adopt a healthy lifestyle and related behaviours due to the increased knowledge they gain about the disease and a sense of social cohesion (15-17). These efforts support the

goal of improving the self-care, clinical care and mental health of patients and their caregivers (17). Previous research has shown that peer support leads to improved knowledge (18, 20, 37) and reductions in HbA1c (18, 20), blood pressure (19-21), cholesterol, and body weight (18, 20), and is associated with better social support (38), greater empowerment and improved quality of life (39).

3.2 Methodology

The study design takes into consideration different cultural and social environments in urban (CHC Ljubljana) and rural (CHC Slovenj Gradec) areas, as distinct forms of peer support are acceptable in each setting (17). The purposeful sampling method will ensure that the recruited participants are suitable for the peer supporter role. Peer supporters must understand they are not medical professionals and should not attempt to provide medical treatment or diagnosis. If a situation arises that exceeds the limits of their knowledge and experience, they should refer the recipient of peer support to a healthcare professional for appropriate care (14, 22). The involvement of healthcare professionals will help actively raise awareness and the value of peer support, thereby reducing the spread of misinformation and concerns about recommending it (16, 20).

There are no clear recommendations on who should lead the training of peer supporters (nurse-educator, multidisciplinary team, research expert, etc.) and how long the education should last (from few hours to several months) (18-20), although training in the form of a structured curriculum lasting more than five hours seems to be associated with improved glycaemic control and diabetes knowledge (18). In our study we opted for a nurse-led structured education programme lasting a total of 15 hours, conducted over a period of two months. By providing a combination of group and individual training sessions, participants will have the opportunity to receive comprehensive knowledge about T2D and AH, as well as the required communication skills.

The literature describes different models of providing peer support to patients: led by a healthcare professional, a lay patient or a community health worker (17-19, 37, 38). Models of peer support can take place individually, in groups or remotely via telephone or online (16-18, 20). Different frequencies and durations of providing peer support are described in the literature, with meetings taking place from once a week to once every three months, with an intervention's duration of one to 12 months (15, 18, 19). In our pilot study trained patients will voluntarily provide peer support to other patients at monthly group meetings for a period of three months, with each meeting lasting at least one hour.

The study aims to build upon the lessons learned from the previous unsuccessful attempt at establishing peer support in Slovenia (22) and ensure that the intervention is well organised, effective and sustainable. This will be achieved through several key strategies, including purposive sampling for the selection of suitable candidates for the peer supporter role, the incorporation of a mentor-educator who will provide ongoing support and guidance, regular evaluation and monitoring to identify challenges and areas for improvement, and acknowledgement of peer supporters with honorary titles and certificates. We expect that this study will provide valuable insights and help to identify the barriers, fill gaps and inform future models for peer support.

3.3 Limitations

A limitation of this study could be a biased sample, as only eligible candidates who are able to self-care for their disease, are responsible and have the ability to listen, understand and communicate with people, will be invited to participate in the education programme. The actual implementation of our research depends on each individual's willingness and motivation to voluntarily provide peer support, so a gradual drop in motivation and in some cases withdrawal from the intervention is to be expected (15, 16), and we estimate a dropout rate of 20%. To overcome this issue, we will focus on participation and recognition strategies, such as good communication and clearly presenting the benefits of peer support.

The study does not have a control group of patients with T2D and AH who will not receive the peer support. Therefore, it will not be possible to exclude other factors that could influence the evaluation of the results of the intervention. Another limitation might be the duration of the pilot study, as outcomes will only be monitored during first three months of peer support.

In our opinion, all the limitations are comprehensively covered and will not significantly affect the validity and reliability of the results. Moreover, this is a pilot study and all these factors should be taken into account when developing future peer support interventions.

4 CONCLUSIONS

This will be the first Slovenian research project to develop a model of peer support that could scale-up the integrated care for patients with T2D and AH at the primary healthcare level in Slovenia and similar settings. Peer support through empowering patients, family members and other informal caregivers in the local community could lead to higher levels of patient empowerment and better quality of life. To improve the overall health of patients and their caregivers, it is crucial to integrate peer support

interventions more effectively into healthcare delivery and thus make them one of the key components of the integrated care continuum.

CONFLICTS OF INTEREST

The authors have no competing interests to declare.

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ETHICAL APPROVAL

The study was approved by the National Medical Ethics Committee (reference number 0120-219/2019/4).

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