Project title: A randomized trial of an intensive education intervention using a network of involved diabetic patients (peer educators) to improve glycaemic control of type 2 diabetic patients (Bamako, Mali) - ST10-024

Institution: Santé Diabète; Hopital National Point G; CHR de La Réunion

Investigators: Besancon Stéphane; Sidibé Traoré; Maryvette Balcou-Debussche; Xavier Debussche; Serge Halimi

Resume: This study aimed to test the use of peer educators in type 2 diabetes management. The study took place in Bamako, the capital city of Mali and involved 151 participants. Ten peer educators were trained using booklets focusing on how to manage cardiovascular risk, dietary fat, physical activity and insulin. After twelve months from the intervention, the intervention group reported better results in the evolution of BMI, waist circumference and Hba1c.

Key results and findings: After six months the intervention group reported better HbA1c readings than the control group. In terms of the other biological parameters there was no significant difference between the two groups. Twelve months after the intervention, there were significant differences in the evolution of BMI, waist circumference or Hba1c between the two groups.

Considering the evolution within the same group, 12 months after the intervention there were significant improvements in BMI, waist circumference, systolic blood pressure, Hba1c and knowledge. After 12 months there was no change in dietary diversity score between the two groups. However, there were positive changes in the number of meals per day, the quantity of snacks, the composition of breakfast and some other meals.

Main outputs produced:
- Education booklets
- The material employed to recruit, identify and train the peer educators was collected in a methodological guide that can be disseminated in other areas of Mali and West Africa

Identified opportunities: Several discussions took place with patients associations to develop activities that reflect the recommendations included in the booklet. Many patients asked for cooking classes in order to learn how to better manage their diet and nutrition.

Lessons learned:
- In a country like Mali, with a small number of health professionals, peer educators and an appropriate intervention strategy are fundamental in order to improve patient education and overcome the weaknesses of the health system.
- Monitoring is necessary to ensure that each step of the methodology is applied correctly.

Presentations:
1st Scientific Sessions of the African Diabetes Congress, Arusha (Tanzania), July 2012
West African Health Organization (WAHO), Ouagadougou (Burkina Faso), November 2012
Congress of the French speaking society of diabetes, Montpellier (France), March 2013
World Diabetes Congress, Melbourne (Australia), December 2013
Symposium International de Libreville sur le Diabète en Afrique, Libreville (Gabon), June 2014
Project title: The Impact of Initiation of an Educational and Preventive Foot Care Centre for Subjects with Diabetes in Alexandria, Egypt (ST07-004)

Institution: Unit of Diabetes and Metabolism, Department of Internal Medicine, Alexandria Faculty of Medicine, the Rotary Club of Alexandria West

Investigators: ASSAAD-KHALIL Samir (principal investigator)

Resume: A mosaic of risk factors is contributing to high prevalence diabetic foot disease in Egypt. Most of these factors are manageable with comprehensive preventive strategies, committed healthcare professionals and patient awareness and empowerment. This study highlighted the poor level of the quality of preventive foot care delivered to people with diabetes, in all sectors of health delivery. Many people with diabetes in the study population were not offered adequate foot-specific information during their follow-up visits. This was related to poor adherence to foot care practices which in turn predisposed people to many foot problems.

Key results and findings: The study demonstrated that patient education on adequate foot care practices, criteria for footwear and when to seek medical advice is an essential strategy to reduce the risk of diabetic foot complications. This is of particular value in a region where this discipline was completely absent in a community encountering social, economic and political challenges.

The development of diabetic foot ulcers has a negative impact on the health-related quality of life of people with diabetes especially regarding the physical health. It demonstrated that assessing health-related quality of life in people with diabetic foot ulceration provides important information for the best way to plan educational interventions and evaluate outcomes of different therapeutic strategies. The possibility of diabetes-related foot ulceration may increase with male gender, smoking, higher BMI and low levels of education.

Main outputs produced:
- One booklet in Arabic on the diabetic foot distributed locally
- Project selected to be replicated through BRIDGES Research Net in 3 countries (China; Ecuador and Zimbabwe)
- More than 8 universities in Egypt are now initiating centers for foot care
- Awareness propagated to other countries like in Bahrain
- Foot care for diabetics has been introduced as a part of the undergraduate and post graduate curriculum in most medical schools in Egypt
- Training of 15 physicians and 12 nurses
- Lectures to increase the awareness of HCPs (2700 professionals nationwide). Education of about 3600 patients
- Medical and foot examination for 2600 patients

Identified opportunities:
- Foot care for people with diabetes has been introduced as a part of the undergraduate and postgraduate curricula in most medical schools in Egypt
- Around a dozen universities have established centres for foot care
- Initiation of a regional registry

Lessons learned:
- This simple foot care educational intervention was an effective and practical method to improve knowledge and practices about foot care. The intervention also demonstrated that it could increase the motivation of people with diabetes to change their behaviour regarding their feet.
- Awareness is a key point in propagating the need for primary prevention through risk factor identification and lifestyle modification.
- In order to reach patients in remote areas it’s particularly useful to distribute awareness-raising information in remote centres, stressing that the service is free of charge, and that in some cases incentives such as laboratory investigation vouchers, topical creams and soaps will be given free of charge.


Presentations:
20th World Diabetes Congress, Montreal (Canada), October 2009; 21st World Diabetes Congress, Dubai (UAE), December 2011 (invited speaker); 49th EASD, Barcelona (Spain), September 2013 (DESG symposium)
**Project title:** A randomized translational study to examine the effects of shared care versus usual care in management of gestational diabetes in a three-tier prenatal care network. Tianjin, China (LT09-227) & Promotion of Community-Hospital Integrated Model for Diabetes Management in Beijing - ST12-024

**Institution:** Tianjin Women’s and Children’s Health Centre & Department of Endocrinology, Beijing Tongren Hospital, Beijing (China)

**Investigators:** Huiguang Tian, Xilin Yang & Mingxia Yuan; Shenyuan Yuan; Hanjing Fu; Gang Wan; Liang Xu; Yujie Lv; Lianxiao Zhu; Jinkui Yang

**Resume:** The Tianjin study aimed to evaluate the effectiveness, cost-effectiveness and sustainability of a community-based shared management programme in Tianjin’s three-tier prenatal care network using a randomised trial, with 920 pregnant women identified to have gestational diabetes (GDM) randomised to receive shared-care intensive management or normal prenatal care. A total of 339 women were assigned to the shared-care intervention, which included several activities such as individualised dietary advice, advice on physical activity, and individual and group education sessions. The intervention proved to be successful in reducing the rate of macrosomia among babies of women with GDM (the rate of macrosomia was 11.2% in the SC group compared to 17.5% in the UC group). The study failed to show that the SC was able to reduce the rate of birth weight ≥4500 g due to low prevalence of birth weight ≥4500 g.

The project trained intervention staff, helped build up local human resources, and upgraded the management system for GDM, which will benefit women living in the area in the long term. The project has created a model for care delivery to pregnant women with GDM for China and other parts of the world.

**Identified opportunities:** The benefits of the lifestyle intervention had been established by other trials and were translated into the Tianjin antenatal care system by this study. However, the long-term benefits of such an intervention on women with GDM and their children are still unknown. Follow-ups of these women are needed to address important issues.

Based on the previous Beijing Community Diabetes Study, 3212 people with diabetes from 15 community health centres in five urban districts selected by a multi-stage random sampling approach were randomised into either the control group or the intervention group. People in the intervention group were managed with a web-based electronic support system, as well as a peer-support group. Management-adjustment strategies on guidelines were applied by a collaborative team consisting of tertiary hospital specialists and community GPs. The quality and efforts of the community hospital integrated model for diabetes care was assessed by analysing group changes in the primary outcome, mainly the proportion of patients reaching an optimal control of glycaemia, blood pressure and lipids, as well as the clinical outcomes such as the incidence and progress of diabetic microvascular complications. The database was established using Epidata version 3.0 and audited for accuracy.

An expert committee was formed comprising 15 experts from relevant professional fields including endocrinology, cardiology, ophthalmology, general practice, nutrition, epidemiology and medical statistics, and a further 15 endocrinologists from tertiary hospitals.

In total 120 GPs from 15 community centres trained on the intervention. 1497 patients in the intervention group and 1715 in the control group from 15 community health centres in five urban districts were included in the study. Significantly more patients in the intervention group reached glycaemic and blood pressure control targets compared with the control group. In the intervention group 18.75% met all the HbA1C, blood pressure and LDL-C target values at 24-month, as compared to 14.21% in the control group and 7.95% at baseline.

**Identified opportunities:** Materials created for the programme, including brochures and roadmaps of guidelines promoting diabetes management appropriate for Chinese patients, were made available to the GPs after the study for their daily use.

**Publications:**
- "Can shared care improve outcomes in women with gestational diabetes?" Diabetes Voice, June 2011
- "A randomised translational trial of lifestyle intervention using a 3-tier shared care approach on pregnancy outcomes in Chinese women with gestational diabetes mellitus but without diabetes" Journal of translational medicine, 2014, 12.290
- "Integrated efforts key for optimal diabetes care in China", Diabetes Voice, June 2014

**Presentations:** World Diabetes Congress, Dubai (UAE) December 2011; World Diabetes Congress, Melbourne, (Australia) December 2013; World Diabetes Congress, Melbourne (Australia), December 2013 (2 posters); 75th Scientific Sessions of the ADA, San Francisco (USA), June 2014 (1 poster)