

## REVIEW

# Factors complicating the diabetes management of visitors to Japan : advices from a Japanese National Center for overseas medical staff

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**Abstract :** Linguistic, cultural, and geographical differences might challenge the management of diabetes patients travelling in a culturally and linguistically homogeneous country. This article presents an instructive case and identifies various factors that can help in effective diabetes management of such cases. A Russian female patient aged 23 came to Japan and visited our hospital for a second opinion regarding glycemic control. She was diagnosed with type 1 diabetes at age three and started insulin injections and diet therapy with carbohydrate counting methods. Her HbA1c level was 11.0% with multiple daily insulin injections. She showed neuropathy, nephropathy, and blindness due to her progressed retinopathy. Because of the language barrier, suggestions for lifestyle modification were not effectively conveyed to the patient. We analyzed possible barriers to effective diabetes management in such foreign patients. In addition to language barriers and difficulties in diet therapy, dissimilar diabetes treatment guidelines, inadequate healthcare insurance, and stress-inducing conditions can be barriers to effective diabetes management. Foreign diabetes patients might face several barriers in effective management while travelling in Japan. Use of medical interpreters, adequate medical insurance, and trained medical staff will help in overcoming these barriers. *J. Med. Invest.* 63 : 15-18, February, 2016

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## INTRODUCTION

The number of patients with diabetes has been increasing drastically worldwide and the number of visitors from foreign countries to Japan has also increased. In 2014, the total number of foreign residents in Japan was over 2 million (1), and the yearly number of visitors exceeded 10 million (2). Japan may expect more visitors, especially at the 2020 Tokyo Olympic Games. Therefore, Japanese medical staff is increasingly likely to encounter foreign patients with diabetes. However, as Japan is a linguistically and culturally homogeneous nation, Japanese medical staff is not accustomed to managing foreign patients as multiracial countries have been doing throughout their long history of multicultural coexistence (3-6). Diet therapy and exercise therapy are important to diabetes management, and if insufficient, pharmacotherapy will be used to achieve optimal glycemic control. However, diet therapy may be especially difficult to manage because eating habits are unique to each culture and ethnicity (7, 8). Language barriers, differences in cultural habits, healthcare insurance, and medications are also problems. Our hospital, the National Center for Global Health and Medicine (NCGM) is a pivotal medical institute that promotes the distribution of standardized high quality diabetes treatment and care across the nation. Therefore, not only domestic patients but also many foreign patients with diabetes who are temporarily visiting Japan visit our hospital. Here, we describe an instructive

case of a foreign patient with diabetes who visited the NCGM. We analyzed possible cultural, financial, and linguistic barriers in managing foreign patients in Japan and provided recommendations for effectively managing foreign patients with diabetes in real clinical settings. Although this article primarily focuses on Japan, the findings of the article can also be applied to the diabetes management of a foreign patient in any culturally and linguistically homogeneous country and provide the basis for advice for the medical staff of the patient's native country regarding education and suggestions for the patient prior to travelling.

## CASE REPORT

A Russian female patient aged 23 came to Japan and visited our hospital with her elder sister and the patient's Japanese friend to receive a second opinion for her glycemic control. She had been diagnosed with type 1 diabetes in Russia at the age of three and had started insulin injections and diet therapy with carbohydrate counting methods. Her HbA1c level was 11.0% with multiple daily insulin injections. She showed neuropathy and nephropathy and was already blind due to her progressed retinopathy. Because the patient could speak only Russian but we could not, we mainly talked with her sister who spoke both Russian and English and asked her to translate to the patient. When medical staff members were not able to speak English, they asked the patient's Japanese friend to translate in English, and then the patient's sister translated to the patient in Russian. Therefore, we could not converse with the patient directly in any way. As the patient's sister was neither trained interpreter nor professional medical staff, we had to explain in detail a range of issues ranging from the very basic pathophysiological

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issues of diabetes to practical ones such as life-style modification using simple and comprehensible words. This situation always took time and left us concerned that what we explained may not have been precisely conveyed to the patient. The patient's sister cooked for the blind patient in Russia and while she was staying in Japan. Since we were not familiar with Russian food, we asked the patient's sister to take photos of dishes and bring them every time the patient and her sister visited us. The doctors and the dietician checked the photos together and found that the patient had excessive meat (protein), salty soup, and carbohydrate intake. With the information provided by the photos, we could provide concrete and practical recommendations to the patient's sister to reduce salt intake and total calories. Therefore, the photos they brought us were actually quite useful to explain points to be improved and led the patient to ameliorate her edema and lose 3 kg weight within 2 weeks. As for medication, because we already knew that the patient and her sister would stay in Japan for only a few weeks, we tried not to change her treatment drastically but proposed slight modifications of the times and dosages of insulin injections. Because her eating habits were irregular in time and amount, and her carbohydrate counting was somewhat vague, she had often experienced hypoglycemia with inappropriate insulin injection dosages. In addition to diet modification, we should have radically changed the timing and dosage of insulin injections or even changed the insulin itself. However, considering the patient's uncertain lifestyle and medical support in Russia, we could only modify her treatment at a minimal level. Because the patient did not have any medical insurance available to cover her medical expenses, she needed to self-pay, and her treatment was actually paid by the Japanese friend. This financial constraint further limited her treatment options and forced us to keep the medical expenses to a minimum.

## DISCUSSION

Based on our experiences with the above case and an extensive analysis of associated factors, the following important recommendations identify and address major challenges faced in the diabetes management of a foreign patient in Japan.

### *Differences in diabetes treatment*

Although organizations such as the International Diabetes Federation (9), American Diabetes Association (10), European Association for the Study of Diabetes (11), and the American Association of Clinical Endocrinologists (12) provide guidelines for treating diabetes, countries differ in terms of the availability of antidiabetic drugs, medical insurance systems, feasibility of hospital visits, and drug usage preferences of physicians. Therefore, when a patient visits another country, he or she may not be able to have the same treatment as they have had in their native country. In our case, the insulin she used in Russia was not available in Japan. To reduce the hypoglycemic attacks she often experienced in Russia, we could have dramatically changed insulin itself or the timing and dosage of insulin injections. However, considering the problem regarding insulin availability in Russia and the patient's concern about changing treatment regime, we could only adjust her insulin regimen minimally. In addition to this problem, oral statements by the patient and her family were the only source of medical information, because they had not brought her medical records with them to Japan. Therefore, bringing along medical records, ideally prepared by the doctor in charge, is recommended when traveling to foreign countries.

### *Language barriers*

Language barriers are a critical obstacle to providing optimal

care. As effective communication between patient and provider is critical to the delivery of safe, high-quality care, language barriers appear to increase the risks to patients' safety (13-17). Patients who do not understand the language of the country they are visiting have an increased risk of medication nonadherence, and are unlikely to have a usual source of healthcare (18-20). Language barriers can also result in misunderstanding or inadequate comprehension of informed consent, diagnoses, and treatments, dissatisfaction with care, morbidities and mortality otherwise preventable, and disparities in prescriptions, test ordering, and diagnostic evaluations (14, 16, 21-26). For effective diabetes care, patient-medical staff communication, in particular medical staff's ability to listen to their patients, and support them in modifying their lifestyle is essential and should improve patient's self-management and thereby, health outcomes (27). However, when language barriers are present, clinical communication can be difficult and contribute to poor diabetes management and outcomes (28). In the case of diabetes, some patients may initiate insulin therapy, which needs accurate and precise explanation for the procedure and timing and dosage of injections. Inaccurate and incomplete explanations of insulin injections without an interpreter may expose patients to danger. As for an interpreter, the patient's friends or relatives or medical staff who can speak the patient's language will frequently play the role of an interpreter, although their interpretation skills have not been verified (15). This situation creates many problems such as interpretation inaccuracies, non-neutrality and confidentiality problems, and burdens on informal interpreters (15, 17, 28). Untrained interpreters may have difficulty understanding and accurately interpreting key concepts related to diabetes and diabetes control (28, 29). Previous studies found that approximately half of all conversations between foreign patients and hospital nurses resulted in misinterpretations that seriously compromised the physician's understanding of patient's symptoms or the credibility of the patient's concerns (14, 30). By making professional interpreters available to all patients, healthcare institutions can provide diabetic care to foreign visitors comparable in quality to that provided to patients in their own country (3). In Japan, some facilities dispatch professional interpreters to hospitals. They are much more reliable than informal interpreters, but in most cases, they need a prior appointment and it is difficult to respond to an urgent request. In addition, payment for the cost of interpretation (by a patient or a hospital or both at a certain ratio) is another matter of concern. Telephone interpretation agencies facilitate direct communication as the interpreter becomes only a communication aid and the individual can be more anonymous, especially when discussing sensitive matters or undergoing physical examination (15). However, this kind of service in Japan is usually available only during working hours and cost is also a consideration. Therefore, medical staff should be aware of the merits and demerits of the aforementioned choices in interpretation and should choose what is best for patients, knowing the risks of communication without an interpreter. Effective training for interpreters and medical staff is also needed to avoid problems caused by misunderstanding and to encourage patient's self-management of diabetes (6).

### *Difficulties in diet therapy*

The current trend towards globalization increases the population of people living in other countries. Traditional eating habits are perceived as difficult to change, and foreign patients tend to maintain their native countries' cuisines with their own eating habits and ingredients. According to a report on Surinamese immigrants with diabetes in Holland, many patients perceived the dietary guidelines to be based on Dutch eating habits, making it difficult to reconcile them with Surinamese cooking and eating practices (8). Therefore, foreign patients might benefit from culturally sensitive

health education (7, 8) and medical staff should be aware of and respect their cultural and spiritual backgrounds.

In Japan, the Food Exchange Lists, edited by the Japan Diabetes Society, are commonly used for diet instruction by registered dietitians. If it is difficult for patients to understand the Food Exchange Lists, actual food products or food models may be used to give instruction (31). However, these materials are developed mainly on the basis of standard Japanese ingredients and cooking and are not practical for foreign patients who continue eating their native meals. If dietitians are not familiar with foreign cuisines and feel that they cannot provide appropriate instruction, they sometimes ask patients to bring photos of their daily meals. Photos of cooked food are often quite helpful in giving a dietitian a rough image of the calories and nutritional balance of each meal. However, this method is dependent on patient cooperation (32-34). In our case, the patient's sister was quite cooperative with us and the photos gave us significant information about the patient's dietary habits.

#### *Differences in health care insurance*

In 1961, almost everyone became insured in Japan, and since then, the enforcement of the same fee schedule for all plans and almost all providers has maintained equity and contained costs. The co-payment rate has become the same for all, except for elderly people and children (35). However, Japanese health insurance is, of course, not extended to foreign visitors. Foreign patients with diabetes are encouraged to apply for medical insurance prior to travel. Foreign patients whose medical fees were covered, at least partially, by travel insurance, insurance taken in their own countries, or eligibility for Japanese medical insurance may have relatively small burdens. However, patients without insurance available in Japan have to pay their own expenses and that could be very expensive. This may cause delay in visiting hospitals and may lead to fatal results. Even if patients have medical insurance, the potential financial burden of diabetes management may result in non-adherence to medication schedules and consequently with poorly controlled diabetes, as indicated by higher HbA1c levels (36). Therefore, medical staff should be aware of the financial pressure on individual foreign patients, including insurance status, and should explain to patients the approximate medical cost before conducting any examination or treatment. In addition, medical staff should make every effort to reduce medical cost for these patients.

#### *Stress-inducing conditions*

Some foreign patients temporarily visiting Japan may enjoy experiencing quite different life style from that of their native countries, but some may feel it stressful especially if they consider it difficult to adjust themselves to Japanese lifestyles; this could cause depression. Previous findings suggest that a bidirectional association between depression and type 2 diabetes exists; depression increases the risk of type 2 diabetes (37-39) and may worsen glycemic control. Therefore, in addition to care in diabetes management, special care regarding mental stress will be necessary for certain patients suffering from mental problems such as depression.

## CONCLUSION

This article identifies the role of cultural, linguistic, and financial barriers in the effective management of foreign diabetes patients in Japan. To provide better diabetes care to foreign patients, efforts should be made to understand their cultural backgrounds, food habits, and the diabetes treatment guidelines used in their native countries. Only then, the adjustment in medication, food, and life style can be effectively made to achieve desired glycemic control. Increased availability of professional medical interpreters and

instructing the medical staff how to effectively handle foreign patients will significantly help overcome communication barriers. Patients with diabetes should also be educated before traveling by medical staff in their native country about the importance of travel-related stress, medical insurance, and language barriers while traveling in another country, especially if it is linguistically and culturally homogeneous.

## AUTHOR DISCLOSURES

There are no conflicts of interest to declare.

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