

conducted a large survey among 954 general surgeons involved in the training of surgical residents, and concluded that changes were needed as the system of resident education allowed chief residents to graduate with significant deficiencies in their education. There is very little locoregional data regarding the current surgical residency-training program to reflect such problems and then to raise proposals that will improve performance and outcome.

What is a surgeon? The definition of the surgeon has been changed from the beginning to the end of the last century. If we look into the 1913 Webster's dictionary, the surgeon is defined as "one whose profession or occupation is to cure diseases or injuries of the body by manual operation". The 1998 Webster's dictionary defines the surgeon, as "a medical specialist who practices surgery", which is further defined as "a branch of medicine concerned with diseases and conditions requiring or amenable to operative or manual procedure". Thus, the focus shifted over time from a specialty defined by "manual operation", to one defined by concern with the disease that might need operation. There is a fast development of technology in the field of surgery, and accordingly, this has generated an increasing need to develop methods of technical skills instruction outside the operating theaters, in the form of courses or workshops. In fact, the latter are considered a mainstay of continuing education programs for surgeons. Some training programs provide sporadic teaching and practice opportunities for their residents outside the operating room. A detailed technical skill program for first-year residents in general surgery has been established, which consists of introductory didactic sessions and wet labs. The latter included instructions on the preparation of the patient and draping, aseptic technique, the principles of bowel anastomosis, incisions, the use and handling of instruments, principles of hemostasis, intraoperative surgical emergencies, surgical assisting and theatre etiquette. It must be emphasized that the introduction of laparoscopic techniques made the teaching of operative skills more difficult, due to many factors that include the complexity of the procedure, the medicolegal concerns and more time consumed in teaching skills in operating theatres. Nonetheless, it has been shown that concentrated didactic training in laparoscopy in a brief course unrelated to prior surgical experience, can improve skills in both residents and established surgeons. Advances in computing, imaging and information transfer have also allowed the use of virtual reality in the performance and teaching of surgery. Medical simulators are rapidly evolving from primitive plastic mannequins to machines with embedded technology.<sup>5</sup> For example, the minimally invasive surgery-trainer virtual reality system allows suitable

tasks to be performed using laparoscopic instruments connected to a computer, where the movement of the instruments can be both measured and translated into a graphical display. Based on the above account, several practical methods have been introduced to train surgical residents outside the operating theatres. Such methods will enable them to improve the training to overcome the problems of the decreasing number of clinical cases in medical teaching centers and the increasing importance of minimal access surgery. In this way, we will have in our hands practical and convenient methods that can be applied in our surgical training program to overcome similar problems.

Therefore, We conclude that the traditional educational strategies in the current surgical training program need to be changed to cope with the recent developments in minimally invasive surgery, and the decreasing number of clinical cases in medical education centers. Before hand, the need for change should be confirmed on a wide scale by conducting a survey among the surgical consultants involved in the training and education of surgical residents, in various teaching and training centres Kingdom wide, and obtaining trainees feedback in this matter.

**Acknowledgment.** The author would like to thank Mrs. Corazon Rivera in typing the final manuscript.

Received 25th November 2003. Accepted for publication in final form 24th April 2004.

From the Department of Surgery, College of Medicine and King Khalid University Hospital, King Saud University, Riyadh, Kingdom of Saudi Arabia. Address correspondence and reprint requests to Dr. Gamal A. Khairy, Assistant Professor and Consultant General Surgeon, Department of Surgery, College of Medicine and King Khalid University Hospital, King Saud University, PO Box 7805, Riyadh 11472, Kingdom of Saudi Arabia. Tel. +966 (1) 4671575. Fax. +966 (1) 4679493. E-mail: gkhairy@ksu.edu.sa

## References

1. Way LW. General surgery in evolution: technology and competence. *Am J Surg* 1996; 171: 2-9.
2. Hamdorf JM, Hall JC. Acquiring surgical skills. *Br J Surg* 2000; 87: 28-37.
3. Andreopoulos S. The folly of teaching-hospital merges. *N Engl J Med* 1997; 336: 61-64.
4. Weigelt J, Brasel K, Olson C, Thal E. Opinions of practicing general surgeons on surgical education. *Am J Surg* 1998; 176: 481-485.
5. Champion HR, Gallagher AG. Surgical simulation - a 'good idea whose time has come'. *Br J Surg* 2003; 90: 767-768.

## Terminology in diabetes; an example of resistance to change

Saleh A. Aldasouqi, MD, FACE,  
Ali S. Alzahrani, MD, FRCP

**D**abetes mellitus is probably the most common and devastating chronic disease throughout human history. It has afflicted mankind for thousands of years and it continues to do so, at an exponential rate. While threatening to become a global epidemic, diabetes has already acclaimed epidemic scales in the Kingdom of Saudi Arabia.<sup>1</sup> Diabetes is a heterogeneous disease with different pathophysiological and etiological mechanisms. Given its heterogeneous nature, the first step in its management and control is to use a standard and unified terminology. As diabetic terminology had been confusing to patients and physicians alike, diabetic organizations have called to standardize such terminology, and to standardize diagnosis and screening policies. International relevant guidelines using a uniform terminology in classification and diagnosis of diabetes were published several years ago, and are updated annually.<sup>2-4</sup> It has been our observation that despite the widespread popularity of these new guidelines, old terminologies are still in common use. In this brief communication, we provide an update on the classification of diabetes, and recommend minor modifications in the new terminologies and abbreviations to help reduce the confusion.

**Historical background.** The first recognized international classification of diabetes appeared in 1979. This was developed by the National Diabetes Data Group,<sup>2</sup> and was then adopted by the World Health Organization (WHO)<sup>4</sup> and by other authorities worldwide. In the subsequent 2 decades, diabetes was given several names and descriptions that were added to a treasure of pre-existing, accumulating terminology. This has resulted in a long list of terms and terminologies, which added to the cloudiness that had already wrapped the understanding of diabetes. Various aspects of the disease were used as the basis for the varied terminology. For instance, terms like insulin-dependent diabetes mellitus (IDDM), non-insulin-dependent diabetes mellitus (NIDDM), juvenile diabetes mellitus (JDM), and maturity-onset diabetes mellitus (MODM) referred to such parameters as treatment modality and age at onset. Such terms did not reflect etiology and pathophysiology, which represent concepts of more relevance from a scientific standpoint. Furthermore, different types may overlap in terms of these parameters, such as the case of an elderly man with a 20-year history of diabetes treated with oral agents, who finally requires insulin. Should we then use IDDM or NIDDM to describe this man's diabetes? Some used the term insulin requiring diabetes mellitus (IRDM) in this case. Over the last 6 years, major changes in the classification and diagnosis of diabetes have been introduced to improve, collectively, the universal understanding of diabetes. Such changes were published in the

form of guidelines and position statements by major international diabetic organizations, but were pioneered by the American Diabetes Association (ADA).<sup>4</sup>

**The new classification guidelines.** Needless to say that the confusion among physicians and patients about the many terms previously used to describe diabetes has urged the international diabetes organizations to develop simple and disease-specific terminology for the various types of diabetes. The ADA has therefore developed new guidelines for classification of diabetes in 1997, which were later adopted by the WHO and by other authorities worldwide.<sup>4</sup> These guidelines are updated on a regular basis, in the annual supplement issue of the *Diabetes Care Journal*.<sup>5</sup> According to the new ADA guidelines,<sup>4</sup> diabetes has been classified into 4 major types, based on etiology and pathophysiology, rather than on the age or treatment modality utilized in the previous classifications.

**Type 1 diabetes.** This includes autoimmune or idiopathic diabetes, occurring at any age. The hallmark feature in this category is absolute insulin deficiency, occurring over a relatively short period of time. This basically covers the older terms (IDDM, JDM), but not to include patients previously referred to as maturity-onset diabetics currently taking insulin, referred to as IRDM.

**Type 2 diabetes.** This type basically includes the classically described maturity-onset or adult-onset diabetes, regardless of age, or the type of treatment. Obviously, this is the most common type of diabetes. Usually, there is association with insulin resistance (IR) and obesity or both. Thus, this definition would also apply to children presenting with IR and diabetes, as well as to aging patients with long-standing adult-onset diabetes who ultimately became insulin-dependent.

**Diabetes due to specific etiologies.** This category applies to all forms of hyperglycemia, previously described as secondary diabetes. This includes a wide range of conditions resulting in diabetes, regardless of the pathophysiologic mechanism. These conditions include pancreatic surgery, endocrine syndromes such as Cushing's disease, medications, and various genetic and acquired specific entities, for example, maturity onset diabetes of the young (MODY) and the rare forms of hereditary insulin resistance belong to this category. A long list of conditions, categorized as specific, secondary conditions, can be found in the original publication of the ADA guidelines.<sup>4</sup>

**Gestational diabetes mellitus (GDM).** To apply only to diabetes, first recognized in pregnancy, incidentally or by standard screening, for example glucose tolerance test (GTT). In general, GDM in this sense does not include pre-existing type 1 or type 2 diabetes or, co-incidentally discovered, newly diagnosed type 1 diabetes or type 2 diabetes.

However, it may not be always feasible during pregnancy to distinguish the latter 2 conditions from mere GDM, especially in patients with blood sugars that are difficult to control.

**Remarks on the current status of diabetic terminology and abbreviations.** The first remark is the notion that the ADA emphasized the use of the Arabic numbers (1 and 2) rather than the Roman numbers (I and II) for describing type 1 and type 2 diabetes. The argument presented in the guidelines is to avoid confusion by the public; that is referring to type II diabetes as type 11 diabetes.<sup>4</sup> We ourselves did not imagine that this could occur in real life, until one of us has recently received an invitation from a drug representative to attend a diabetes lecture. The invitation card did clearly read type 11 diabetes. This appeared as a part of the lecture title, and in bold and neat font.

The second remark is the observation that the new guidelines did not offer suggestions for standardized abbreviations. As the introduced terminologies in the new guidelines resulted in long names, for example type 2 DM, the use of arbitrary abbreviations becomes inevitable in clinical practice. Needless to say, abbreviations facilitate medical communications, and they are thus integral to the practice of medicine. However, abbreviations need standardization; physicians always encounter problems resulting from the use of non-standardized abbreviations in various practice communications. The result in the case of diabetic terminology is the appearance of yet, new forms of abbreviations that may set the stage for further confusion among physicians themselves, and between physicians and the other paramedical members in the management team.

In this regard, and as practicing physicians, we continue to observe the persisting use of obsolete diabetic terminology, in addition to the use of bizarre diabetic abbreviations. Among an endless list of encounters, we would like to share the following example to illustrate the issue discussed here. A consultation form was filled-up by a junior trainee at a major teaching hospital. The unique abbreviation used to describe type 1 diabetes in this consultation was quite bizarre and confusing, and it only indicates the persisting uncertainty regarding diabetes terminology. The trainee used a term that read as DDMI; the trainee obviously used the first letter as the Greek delta (to denote diagnosis) and the Roman number I to indicate type one. Certainly, the rush of handwriting brought about the confusion observed in the aforementioned example, but the use of a mixture of letters, digits and symbols in this example contributed further to this confusion. Even when vague handwriting is not a problem, the use of non-standardized abbreviations is discouraged when it comes to a common disease like diabetes. This also applies to medical literature. Although

physicians who are closely related to diabetes are compliant with the new terminology, some physicians in other disciplines are not. As observed in clinical practice, IDDM and NIDDM as well as type II and type I terms are still in use in the literature.

**Recommendation for new abbreviations.** To standardize diabetic terminology, we recommend using the following relevant abbreviations, DM-1 and DM-2, to indicate type 1 diabetes and type 2 diabetes. The use of the dash sign herein serves to separate the letters from the digits, and also gives the impression of categorization. We believe that adherence to these abbreviations will help standardize diabetic nomenclature. The authors are unaware if such abbreviations have been officially used previously.

Received 2nd February 2004. Accepted for publication in final form 4th May 2004.

From the Department of Medicine, King Fahad Armed Forces Hospital, Jeddah, and the Department of Medicine, King Faisal Specialist Hospital and Research Centre, Riyadh, Kingdom of Saudi Arabia. Address correspondence and reprint requests to Dr. Ali S. Alzahrani, Department of Medicine, King Faisal Specialist Hospital and Research Centre, PO Box 3354, Riyadh 11211, Kingdom of Saudi Arabia. Tel. +966 (1) 4647272 Ext. 27490. Fax. +966 (1) 4427499. Email. aliz@kfshrc.edu.sa

## References

1. Al-Nuaim AR. Prevalence of glucose intolerance in urban and rural communities in Saudi Arabia. *Diabet Med* 1997; 14: 595-602.
2. Classification and diagnosis of diabetes mellitus and other categories of glucose intolerance. National Diabetes Data Group. *Diabetes* 1979; 28: 1039-1057.
3. World Health Organization (WHO). Diabetes Mellitus, report of the Study Group, Geneva. WHO Tech Report Ser No. 727 1985. Available from: URL: <http://www.who.int>
4. The Expert Committee on the Diagnosis and Classification of Diabetes Mellitus. Report of the expert committee on the diagnosis and classification of Diabetes Mellitus. *Diabetes Care* 1997; 20: 1183-1197.
5. The Expert Committee on the Diagnosis and Classification of Diabetes Mellitus: Report of the expert committee on the diagnosis and classification of Diabetes Mellitus. *Diabetes Care* 2003; 26: S5-S20.

## A survey of patients' attitude toward total knee replacement in a major center in the Kingdom of Saudi Arabia

Yaser M. Behairy, MD, FRCSC,  
Saleh H. Motuweh, MD, MRCP,  
Khalid A. Kathlan, MD, MRCP.

**K**nee osteoarthritis (OA) is a common problem. In the Kingdom of Saudi Arabia (KSA), it has an estimated prevalence of 36-60% in some regions.<sup>1</sup> In some patients the pain becomes chronic