

## REVIEW ARTICLES

**Values, qualifications, ethics and legal standards in Arabic (Islamic) medicine**

Kamel M. Ajlouni

**ABSTRACT**

Many historians claim that the Western world pioneered in the setting of ethical, legal and professional standards in the practice of medicine. Informed medical consent is proposed by some as an American invention. Others claim that patient rights and legal protection propose have stated in the early decades of the 20th century. This review is an attempt to uncover the facts regarding the way Arabs practiced medicine during the golden era of Islam. Eight hundred to fifteen hundred AD this includes the qualification of physicians according to a well designed curricula covering the science and humanity of medicine. The rules governing the quality control of health care delivery system and to some degree the principles of informed medical consent and to a lesser degree the principles of litigation are discussed. We hope that this paper will be a call to all humanity loving persons to end prejudices against other people and to stop stereotyping.

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The role played by Arabs in the development of medical sciences cannot be ignored although some writers in the West have systematically and deliberately continued to put out of sight and diminish the importance of Arab contribution to all sciences. Nevertheless, injustice found on religious rancour and national conceit cannot be perpetuated and maintained forever. The Arabs' active participation in the universal medical knowledge cannot be forgotten nor put a side, since it did not only construct a bridge binding the ancient with the modern, but also due to the Arabs' unmatched and significant contribution. 1-3 Until a couple of centuries ago, Arabic was the medium of communication throughout the Muslim world regardless of the type of activity practiced be it religious, social or scientific. During 800-1500 A.D., essentially all scientific works were written in Arabic. It is only after the colonization of Muslim lands that this practice became less prevalent and, in many instances, was eliminated. Therefore, the terms 'Islamic' and 'Arabic' are used interchangeably in this paper as they both mean the same. The purpose of this paper is not to talk regarding the great Arab physicians like, for instance, Ibn Sina, Ar-Razi, Ibn Abbas Al-Majousi, Al-Tabari, Al-Zahrawi, Ibn Maimoun, Ibn Huneen and others, nor to shed light on their role in the advancement of medical knowledge. Rather, the paper will try to cover medical practice as a system and concentrate on the following issues: 1. The Islamic principles which govern the Islamic approach to health as a science and art 2. Medical education and the qualifications needed to practice the medical profession 3. The rules and quality control required on the practice of medicine 4. The concept of informed medical consent 5. Record keeping and verbal autopsy as methods of quality care measured by outcomes

**Islamic principles governing medicine.** One of the noteworthy and fascinating aphorisms attributed to the Prophet of Islam is the saying, "Science is 2 types. Religious and body" thus, equating the importance of the study and practice of Medicine with that of Theology and Islamic Jurisprudence.

Other sayings include:

Body health supersedes religious health

Necessities validate prohibitions

Preventing harm is preferable to procuring benefits

The basic concept in useful matters is permissiveness

The basic concept in harmful matters is prohibition

Human life protection is one of the main principles of Shariah

In fact, strengthening the concept of maintaining well-being is top priority in Islam which was crowned by the following verse from the Holy Quran:

*That if anyone slew a person unless it is for murder or for spreading mischief in the land it would be as if he slew the whole people and if anyone saved a life, It would be as if he saved. The life of the whole people*

These and similar concepts, both religious and social, constituted an added impetus to the esteem of the medical profession and emphasized the intrinsic value of the healing arts, thus, giving the physician a respectable position in his community and within the learned circles. 2,5 It was also Islam that emphasized the right of the human body to be taken good care of by every believer, by means of providing it with its nourishment and promoting healthy living conditions.

Medicine was defined by Muslim physicians such as ar-Razi (250-312/865-925) and Ibn Sina (369-428/980-1037) as an art that is concerned with the preservation of good health, the combating of diseases, and the restoration of health to the sick. 2,3,6 It was as early as the third/9th century that most of the medical texts divided the healing art, for the purpose of classification, into 2 parts: theory and practice. Under the theory of medicine, the student and practitioner studied the elements, the humors of the body and their function (physiology) the faculties of body and soul (Anatomy, psychology), the spirits whether animal or vital (pathology), the organs and their utilities, and the temperaments. But

under the practical part, the following branches were taught: therapeutics, including the use of simple and compounded drugs and medicinal recipes; bone setting; and minor surgery.<sup>6-9</sup>

**Arabic medicine.** The role of Arabs in relation to medical education and practice can, historically, be summarized into 3 stages: The transmission and assimilation of intellectual legacies of earlier civilizations marked the first. Under the 'Abbasid caliphs,<sup>3</sup> competent scholars in Iraq and neighboring countries embarked on the translation of the best available writings from Syria, Sanskrit, Nabataean, Coptic and Greek into Arabic. The richest, finest and most influential in medicine, pharmacy and the allied sciences were those translated from the Greek legacy.<sup>1,2,3,7</sup> The second stage witnessed the acceleration and abundance of locally manufactured good quality paper,<sup>2,3,10</sup> the thing that facilitated and enhanced literary production and the art of writing and copying in Islam. After learning the process from Chinese artisans and trans-Oxiana, Muslims established the first ever paper factory in Baghdad, Iraq in 177/794. Very shortly thereafter, this industry, coupled with that of manufacturing writing tools and inks, reached an unprecedented degree of significance in the history of mankind. From Iraq, this knowledge was passed on to Syria where high quality paper was made and, from there, to Egypt, North Africa and Spain (Al-Maghrib). Thus, the copying of manuscripts, cataloging, binding, selling and collecting of books led to new crafts, industries and trades which brought added wealth and high measures of prestige to those involved in them. It's of interest to note the history of paper manufacturing. In a battle near Maru (780 AD) (now in Afghanistan) the Arabs took Chinese prisoners. When they discovered that some of them were experts in making paper they had them establish the first paper factory outside China.<sup>2,10</sup>

Until then the Chinese had monopolized the making of paper for some 600 years. Within 13 years (793 AD) the first and largest 2 factories in the world were established in Baghdad. These factories were unique as they used the flowing water to run the hammers which beat the cloth, making the pulp for paper making. They are shown in histories of technology as the first factories powered not by human or animal power. Soon after, the making of paper spread to Syria, Egypt, North Africa and then to modern Spain. In turn, the abundance of manuscripts some of which were elegantly and artistically inscribed generated a demand for more reliable and precisely executed copies and manuals in the various fields of human knowledge, including those on the healing arts? It is interesting to note that several authors during that period warned against relying on copyists who used cheaply manufactured inks and poor-quality writing materials. Without the availability of paper, the practice of high quality medicine could have never been achieved. The medical history, physical examination recipes, progress notes and medical orders could have never been written or assessed and as a consequence, the quality of medical care would never have progressed. The third stage coincided with the rise of educational and medical institutions<sup>2,3,7</sup> public (state-sponsored) and private, including libraries, hospitals and medical schools which greatly contributed to the sound foundation and steady advancement of medical education Hamarneh et al.<sup>2,3</sup> The first hospital, in the modern sense of the word, was established in Baghdad during the reign of Harun Ar-Rashid (169-193/786-809). The hospital continued to receive adequate attention and financial and moral support from succeeding caliphs. In this, and other hospitals established in the 'Abbasid capital and other cities, physicians of great renown such as Yuhanna b. Masawayh (d. 240/855), ar-Razi (d. 312/925) and Sinan b. Thabit (d. 329/941) practiced and trained others simultaneously. As word of the accomplishments at Baghdad spread, hospital construction proliferated into other big cities which included, Damascus, Antioch, Mecca, Al-Madinah, Cairo, Al-Qayrawan, Morocco, and Granada. Al-'Adudi, the most renowned hospital

in Baghdad<sup>2,3,7</sup> was founded in 367-368/978-979

by 'Adud ad-Dawlah. It was generously endowed and provided with a full medical staff of 24 physicians, surgeons, oculists and pharmacists, in addition to administrative personnel for the building, the kitchen and hospital management.<sup>2,3</sup> With its rich medical library, the hospital served as a focal point and a convenient center for teaching medicine and for the training and practicing of young doctors. It was ar-Razi who enthusiastically recommended that a physician should acquire theoretical as well as practical training in hospitals and at the patient's bedside. The library in each single hospital served as a lecture and reference room, as well as a venue for reading and consultation of medical and pharmaceutical texts.

Of special interest to medical education was the attention Ar-Razi paid to the physician-patient relationship, and the maintenance of high professional ethics.<sup>5,7,10,11</sup> He urged the physician to ask his patient, in a friendly manner, questions pertaining to his health condition, thus, giving him confidence enough to relate his case history. The physician, he insisted, should explicitly express his feelings and concern with his patient's answers and explanations. The physician, meanwhile, should keep a careful watch over the patient's general condition, keeping in mind the following 7 points, which ar-Razi mentions in his al-Murshid and stresses that his students and readers should carefully adhere to:<sup>2,3,6</sup> 1. To define the disease in accordance with the symptoms and clinical examination 2. To find out the reason behind this particular type of illness 3. To deduce from causes as well as symptoms whether the particular case involves one or more diseases or types of diseases and to attempt at defining them 4. To distinguish adequately one type from another 5. To recommend treatment by diet, drug or both 6. To gain the patient's confidence and his readiness to respond willingly to his physician's advice, and also to raise up the patient's spirit and morale 7. To forecast what is going to take place and, thus, warn the patient of what might happen before it does, as suggested in the **Hippocratic prognostics**. In Islam, great emphasis is placed on the importance of developing a cordial relationship between the doctor and his patient.<sup>5</sup> This explains the concept of the family doctor. Islam also upholds the doctrine of instructing the physician by visiting the patient's bedside, with a view to observing the progress of his case, to becoming well-acquainted with his case history, his background and vocation, and, subsequently, to becoming in a better position to diagnose and treat the case properly and skillfully. In Arabic medical texts, we find many clues suggesting the physician's involvement, not only in the professional practice of his calling, but also of the part he should play in the affairs of his community. The physician was presented in these texts as a socially concerned individual and enlightened the citizen, who cared regarding what was going on in his environment. He was also depicted as thoroughly instructed regarding medical deontology and professional ethics.<sup>2,3,5</sup>

**Quality control** The Al-Hisbah<sup>12</sup> (Ihtisab=Infinite of Hisbah) system was highly developed in the Arab World very early and reached a state of perfection in the 8th and 9th century (Hamarneh et al) The principles upon which Al-ihtisab is based are partly religious and partly the result of common sense, together with good judgment on the part of the ruler. (Encyclopedia of Islam). It is mentioned that caliph 'Umar Ibn al-Khattab (12-23/634-644) was the first to have understood and made this type of ethical and religious system of control operative under his supervision, although; Of

course, at the time, limited to commercial transactions (weights, quality etc).<sup>12-14</sup> This began first in the holy city of Al-Madinah. His greatly refined qualifications gave to this office the highest possible expression and dignity. It is right to state that there was awareness of the significance and urgency for implanting this system in the early days of Islam, and initial steps were already taken in this direction. Yet, we have to await the first half of the third/ninth century, over 50 years after the founding of the Abbasid capital, to see the hisbah system starting to spread and to become well established, organized and recognized in the state's administrative structure. It is possible that what al-Mamun (197-217/813-833) and al-Mu'tasim (217-227/833-842) initiated in Baghdad paved the way for the first government enforcement of ethical codes for the health professions Hamarneh et al.<sup>2,3</sup> In 319/931, it was reported to Al-Muqtadir that a certain man died as a result of a physician's error. The caliph, thereupon, ordered Ibn Batha, the renowned and courageous Muhatasib, to prevent any physician from practicing the profession except those who were examined, beforehand, by the chief physician Sinan b. Thabit, and that a license be issued in their names with Sinan's signature affixed on it. During the fourth/tenth century, the hisbah system was established in Egypt, and from there it spread to North Africa. It is interesting to note that in Muslim Spain, the first known Muhtasib to be appointed by the caliph was the pioneer medical reformer and practitioner, Ahmad b. Yunis Al-Harrani (fl. 359/970). The manuals of hisba in the strict sense list the principal trades, and for each of them provide the muhtasib with the technical information which enables him to test the quality of the products and to trace malpractice or bad workmanship all of this being most important documentation for the study of economic conditions. The muhtasib might even, when there existed no special officer in charge of this, test the genuineness of coins. In addition, he had to ensure that merchants and agents did not resort to dissimulation, nor use practices calculated to deceive the customer over the merchandise or the price charged for it. He also made sure, from the legal point of view, which the merchants did not indulge in any operation that was connected with the prohibited practice of usury (riba). His competence even extended to professions that we would nowadays not normally consider as being connected with the suk: he thus controlled apothecaries and physicians. Occasional references in historians (Dar al-Muha-saba wa l-Mawarith or wa l-Mawta) show that hisba was the name of the registry office, where deaths and births were registered and estates and the funds for orphans administered (Encyclopedia of Islam). We shall now proceed to the hisbah<sup>15</sup> office and its relationships with the health professions, since this subject is of paramount interest to us here. We have already highlighted the impact of enforcing official ordinances requiring persons qualified as physicians to sit for an examination and to take the Oath of Hippocrates before licenses or legal permits were issued. Al-Muhtasib also asked physicians to demonstrate their ability in writing prescriptions for their patients that included the diagnosis, medical treatment and recommended diet. He, likewise, advised on the appointment of a chief physician among practitioners in the community; a fact of historical significance in the social structure of the medical profession. In the early part of the 7th/13th century, Al-Jawbari severely criticized frauds committed by quacks he called 'highway physicians' (Atibba'at-Tariq), who roamed rural areas and the outskirts of cities, peddling from one place to another to cure all diseases and to give drugs in a variety of pharmaceutical forms Hamarneh et al.<sup>2,3</sup>

**Medical records, patient outcome, and peer review.**<sup>2,3,16</sup> The practice of medical records keeping dates back to the fifth century, when medical practice was dominated by Hippocrates and his followers. In the Hippocratic literature, medical records were used to demonstrate the cause and course of a disease. According to Western sources it was not until the 20th century that clinical records were routinely used as a tool to assess the quality of medical care, to educate physicians, and to evaluate the outcome of therapy<sup>1</sup> and management. As of the increasing significance of medicolegal issues and their implications, medical records have become an important means of evaluating the quality and outcome of patient care and identifying errors and deficiencies in patient management with the subsequent legal responsibilities.<sup>2,3,10</sup> It has been generally assumed that clinical records were not used as a legal and educational tool before the middle of the 19th century, with most physicians relying on memory for the details of patient history and treatment, and later, describing them anecdotally. As a matter of fact who became interested in the history of informed medical consent and medical record keeping for legal purposes after finding a document of legal medical consent dating back to November 10, 1677.<sup>16</sup> In Arab medicine, with the availability of paper and the beginning of the Hisbah system, medical records became an integrated part of medical practice. The purpose of the following chapter is to report some new information regarding medical record-keeping, outcome of care, and peer review in the 11th century (505-590, Hijra calendar) Arab medicine. No doubt, the availability of cheap paper factored medicine record keeping furthered medical quality control, which made an important part of medical practice in that period, and detailed lists of requirements and conditions were, therefore, applied to the practice of medicine, such as compulsory examinations, delivery of the Hippocratic Oath in public, mastery of anatomy, and familiarity with medicinal preparations and their uses.<sup>2,3</sup>

**The system of Hisbah.** The system of Hisbah (quality control) was highly developed in the Arab world, during the 8th and 9th centuries. It involved quality control of everything in the marketplace, including scales, weights, produce, and services. A handbook for the Muhtasib (quality controller with the powers of a judge) was written in the 11th century by Al-Shaizari (died Cina 1094).<sup>5</sup> Several manuscripts of this book were copied in the 12th and 13th centuries, edited and published by Al-Baz Al-Arini in Cairo in 1946, and reprinted in Beirut in 1981. The system of Hisbah was first brought to the attention of the Western world, in 1860, by Walter Behrnauer. The following is a translation of Chapter 37 of Al-Shaizari's book.<sup>12</sup>

**On supervision (Hisbah) over physicians, oculists, orthopedists and surgeons.** Medicine is a theoretical and practical science which Shari'a (Muslim Law) has permitted to be learned and practiced because of its (medicine's) ability to preserve health and ward off maladies and diseases from this honored human body. A physician is a person who knows the body's structure; the temperament of organs; the diseases that afflict them; the causes, symptoms and signs of such disease; the useful medicines thereto; substitutes for these medicines in case they are not available; methods of their preparation; and ways of their action so that he may keep a balance between disease and the quantity of medicines and differentiate the qualities among medicines. He who is not qualified to do that is not entitled to treat sick people or embark upon a risky medical treatment, nor should he deal with what he does not master of the above. It is said that their practice of appointing a physician in every city was focused on him who was famed for his competence in medicine and then makes him examine the other medical doctors. Those whom he found not to be up to the standard were ordered to dedicate themselves to more learning and were forbidden from treatment of patients. When a physician visits a patient, he must enquire from him about the causes of his disease and the pain he feels (and know the cause, the sign, the pulse and the drugs). Following that, he should write down a prescription for him that includes drinks and other things. Then he has to write down a copy of what the patient told him and of the prescription he has prepared to cope with the disease and hand over a copy to the patient's near relatives who were present with

him in the patient's room as witnesses. On the following day, he should come again, look into the disease, enquire from the patient about his condition, write down a prescription; accordingly, and make a copy of what he has written and hand it to the patient's household. He is to repeat that on the third and fourth day, and so on, until the patient either recovers or dies. If he recovers, the doctor will get his fee and bonus. But, if the patient dies, his next of kin will go to the well-known Physician ("Hakim" or chief of physicians) and show him the copies written down by the doctor. If this physician finds them complying with the requirements of medical craft and rules, without any negligence and carelessness on the doctor's part, he will tell them that. But, if he finds otherwise, he will tell the deceased patient's relatives: "You should claim damages for the death of your relative from the doctor who killed him out of malpractice and heedlessness." So much were they honorably careful so that medicine should be practiced by qualified people so that the practicing doctor may be deterred from any negligence whatsoever. The Muhtasib should make physicians take the hippocrates' oath, which he prescribed for all physicians, pledging themselves thereby not to give anybody a harmful drug, prepare a poison for anyone, describe amulets to any layman, tell women about medicines leading to abortion, or tell men about drugs causing sterility: and not to look at females when he comes to visit and see patients, divulge secrets or violate privacy. It is of great interest to note that a set of standards was in place in the 11th century Arab medicine to qualify and license physicians. Also in place was a set of rules regarding patient care and treatment, starting with the history and examination of the patient, written orders witnessed by those who were present, with a copy of those records sent to the patient's relatives, and daily follow up with a written documented progress report and new written orders, if necessary.

The review of the records by the chief of physicians after death occurred represents the postmortem examination of the outcome of therapy by a peer and may be the first documented reference to the practice of peer review. Two other issues of great importance which were thought to be an invention of the 20th century have their roots in Arab medicine 1. Informed medical consent 2. System of litigation in medical outcomes

**History of informed medical consent.** Even though a fair amount is known about the codes of medical ethics and practice and the physician-patient relationship in ancient civilizations, there is little evidence that the formalized practice of legally binding informed medical consent existed before the late 19th century.<sup>17</sup> I report a documented case of legal informed medical consent, which is dated 12 Shaban 1088 (Nov 10, 1677). While reviewing court records published in a book by Al-Humsi,<sup>19</sup> the author found a copy of the following document. Extraction of hernia of the Christian Ya'coub, son of Ghanim, by the Christian Nichola, son of Yani, on the twelfth day of the month of Sha'ban, of the year one 1088. The reason why this document had been written down is that the Christian Yacoub, son of Ghanim, the Monk in Ballamand Monastery, Kourah Sub-District, province of Tripoli, presented himself at the Tripoli-Syria Holy Sharia Council and hired and engaged the Christian surgeon Nichola, son of Yani, to extract his (Yacoub's) hernia on the right side in return for a fee of 10 piasters. After the hired has undertaken to extract the hirer's hernia and treat it with ointments, the aforementioned hirer asked people to duly and legally bear witness that if the hirer died as a result of fate and God's divine decree because of his being treated by the hired, the latter shall not be held as guarantor for him; and the hirer has also relieved the hired from any responsibility for his death and blood money, and that the hirer or his heir after him shall not be entitled to any related claims made against the aforesaid surgeon.

Effected and written down on the twelfth day of the holy month of Sha'ban of the year 1088.

Witnesses: Mawlana Sheikh Mustafa —may his grace be augmented. Mawlana Sheikh Mohammad, scribe of the original copy. Mohammed Shalabi, Interpreter. Hussein Buluk Bashi. Haj Ramadan, Chief Court Usher.

The document, which was recorded during the Ottoman Empire, attests to the established practice of legal contracts between physician and patient, which were drawn up and signed in the presence of witnesses. It is interesting to note that the contract was not limited to the surgical procedure, but also included postoperative treatment and physician fees. Today, in modern times, the functions of informed consent include<sup>20</sup> 1. The promotion of individual autonomy 2. The protection of patients and subjects 3. The avoidance of fraud and duress 4. The encouragement of self-scrutiny by medical professionals 5. The promotion of rational decisions 6. The involvement of the public in promoting autonomy as a general social value and in controlling biomedical research

**Americans low requirement for a valid informed consent which includes<sup>18</sup>** 1. Adequate disclosure of information 2. Adequate comprehension of information 3. Voluntary consent 4. Competence of the subject/patient to consent. The 17th centenary documents which we presented cover most of the points mentioned above in terms of function as well as requirements for validity.

**Litigation.** The following is a translated document of a case in which a moslem patient took a jewish surgeon to court for alleged malpractice<sup>21</sup> Muhammed, son of Abdullah of the village of Ayn Karim sued Solomon, the Jewish surgeon, who was present with him at the legal council (law covert) and said in his lawsuit that his brother Salih Abdullah was indisposed because of wind in his scrotum. Salih used to go out and come back to his home on his own feet. The aforesaid Jewish surgeon came to Salih and undertook to treat him and relieve him of this wind in return for a fee of 23 zalatas which Salih paid to Solomon. This surgeon said "I will insert the lancet into his scrotum and take out the puss." The plaintiff, who is Salih's brother, said: "I am worried about the idea because Salih may die as the testicles can be fatal organs." The defendant said "I have used the lancet for similar purposes as often as I have hair in my beard and if your brother dies, I am ready to bear the consequences and I can guarantee that he will not suffer any harm." The Jewish surgeon inserted the lancet twice into Salih's scrotum and as deep as the length of a finger. But, blood and puss continued to flow out of the scrotum until Salih died three days later and Abdullah claimed blood money because of his brother's death. The Jew was questioned and admitted that he had got his fee and that he did use the lancet in accordance with his profession of surgery and his knowledge and experience in this field. He added that he had carried out the same with others, and no one of them had died as a result of that. He denied that he had committed himself to any guaranty or pledge in this as the plaintiff claimed. The plaintiff was asked to produce evidence of the pledge and guaranty. Three witnesses from his village came to give evidence that Salih's death was the result of Solomon inserting his lancet into Salih's scrotum. Our Lord the Judge asked the Jewish surgeon (the defendant) to bring people to inform the Judge that Solomon practices this particular surgery in this particular place of the body whenever needed, and in accordance with his profession as a surgeon. Whereupon Solomon brought witnesses who were Haj Hassan the Barber and Mr. Khalid al —Mughrabi, both of whom were skilled surgeons. They gave a testimony to the effect that Solomon, the Jewish surgeon, was efficient in this profession of surgery of which he has full knowledge. They added: "If the



scrotum swells because of puss or wind it is cured through insertion of the lancet, and we have carried out that quite often without any deaths among the operated patients."That was a legal testimony made by these people in addition to other practitioners. According to the laws it was duly written down and immediately submitted to the most learned and outstanding jurist Mr. Hassan effendi, the Mufti of Holy Jerusalem. He replied with correct quotations from weighty legal source books. In one of these Al-Hakim, a prominent scholar, said in his book "Al-Kafi": "If the copper cups and if the circumciser circumcises and the subjected person dies they will not be held liable unless they wrongly perform their respective particular tasks."The Judge, after having quoted the rulings of the prominent religious scholars, ruled that the surgeon cannot be held accountable because he was permitted to perform his surgery according to the contract. The surgeon can be held responsible only if he exceeds the limits of the contract and if well-versed Muslim profession also state that this organ (scrotum) is not be subjected to surgery; because it will lead to the patient's death, and Almighty God knows best. The verdict was stamped with the Judge's formal seal. The judge then told the plaintiff Muhammad Abdullah that according to the evidence examined by the Judge, the Judge found that this Jewish surgeon who is skilled in his craft of surgery pursuant to the testimony of his reliable Muslim fellow surgeons, to the effect that the scrotum may be manipulated with the

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From the National Center of Diabetes, Endocrinology and Genetics and Department of Medicine, University of Jordan, Amman, Jordan.

Address correspondence and reprint request to: Prof. Kamel M. Ajlouni, President, National Center for Diabetes, Endocrinology and Genetics, PO Box 13165, Amman 11942, Jordan. Tel. +962 (6) 5353374. Fax. +962 (6) 5353376. E-mail: ajlouni@ju.edu.jo.

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