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Glycemic Excursions in Diabetics During Ramadan Fasting

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Diabetic patients have an increased risk of hypoglycemia and hyperglycemia during fasting. These episodes could be severe resulting in hospitalization. In normal healthy individuals, during fasting, secretion of insulin is reduced while counter-regulatory hormones such as glucagon and catecholamines are increased. This leads to glycogenolysis and gluconeogenesis to provide glucose for body metabolism. The low levels of insulin in circulation also lead to increase fatty acid release and oxidation that generates ketones which are also used for body metabolism. In diabetic patients, insulin deficiency leads to excessive glycogen breakdown and increased gluconeogenesis and ketogenesis leading to hyperglycemia and eventual ketoacidosis. The anti-diabetic medications including insulin can cause hypoglycemia due to the fasting state. Continuous glucose monitoring during Ramadan showed that there was rapid increase in blood glucose following *iftar* in diabetic patients with greater glycemic excursions during 24 hours compared to normal individuals. However with proper diet and medication adjustment, these glycemic excursions can be reduced, resulting in decrease risk of hyper and hypoglycemia.

Managing Insulin Treated Patients During Ramadan

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Majority of diabetic patients, including those on insulin, fast during Ramadan. Though the guidelines do not recommend patients on insulin therapy, except those on basal insulin only therapy, to fast, many insist on fasting. Hence, these patients need to be closely monitored during Ramadan to ensure that they do not develop adverse events such as hypoglycemia and hyperglycemia. These patients need to be counselled before Ramadan on dietary and fluid intake, physical activity and exercise, insulin adjustments, glucose monitoring and when to break fast. During Ramadan, insulin regimen and dose adjustment should be tailored to the patients based on the pre-Ramadan insulin regimen and dose. Glucose monitoring should also be tailored to the patients' insulin regimen. In summary, even though diabetic patients on insulin therapy are generally advised not to fast, with proper counselling, insulin therapy adjustment and monitoring, many would be able to fast safely.

Intermittent Fasting and Longevity: Mechanisms and Prospective

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Aging is a multifactorial process, much more difficult to quantitate. Every measurable human physiological function declines with specific speeds over a wide range. There are, however, a number of well-studied physical and biological parameters involved in aging, which can be determined and quantitated. Healthy aging and longevity in humans are modulated by a lucky combination of genetic and non-genetic factors. Family studies demonstrated that about 25% of the variation in human longevity is due to genetic factors. In addition, studies on calorie restriction and on the variability of genes associated with nutrient-sensing signaling, have shown that hypocaloric diet and/or a genetically efficient metabolism of nutrients, can modulate lifespan by promoting an efficient maintenance of the cell and of the organism. Time restricted fasting has been shown to have a profound effect on improvement of biological parameters involved in aging. Various studies have shown intermittent fasting can reduce generalized inflammation. Inflammation and aging are a recent theory of aging where data and conceptualizations regarding the aging of the immune system (immunosenescence) and the evolution of immune responses from invertebrates to mammals converged. Also, there are various scientific evidence which shows intermittent fasting improves arterial stiffness and pulse wave velocity as a strong predictor of arterial aging and atherosclerosis. Intermittent fasting may be considered as a dietary strategy for arterial stiffness improvement. Intermittent fasting has improving effect on 24 hours ambulatory blood pressure. Homocysteine and CRP are considered as being a marker of general long-term cardiovascular health. Various studies have shown intermittent fasting may improve these biomarkers as a step forward for longer living. Substrate utilization and respiratory quotient (RQ) are two measures which in long term has profound effect on longevity and non-communicable disease such as diabetes and state of hyperinsulinemia. The data from unpublished data from author shows intermittent fasting in Ramadan can improved RQ and substrate utilization towards longer living. Adiposity is a major risk for shortened life span due to increased risk of non-communicable disease. Gaining weight up to 450 grams per year is a normal phenomenon in adulthood. Intermittent fasting during Ramadan has shown to reduce the total body fat by up to 1000 grams. The state of hydration of human cells and phase angle is a strong predictor of cellular health. Intermittent fasting has shown to improve and increase cellular phase angle. In conclusion, intermittent fasting in any form such as Ramadan fasting has proven effect in prolongation of human life. As a regular practice in adulthood, we may consider intermittent and Ramadan fasting as a lifestyle strategy to prolong life of human being.

Ramadan and Fasting, Advances in Practice, Introducing The Practical Guideline for Diabetes and Ramadan, Developed by International Diabetes Federation in Collaboration with Diabetes and Ramadan International Alliance, 2016

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Ramadan is a whole month of intermittent fasting, from dawn to dusk, every year. Islam has over one billion followers worldwide. Fasting is one of duties for every Muslim, although it is allowed just for those fasting not harmful for them. One of the most important question for diabetic patients and their physicians before Ramadan is whether fasting is safe for them or not. Considering the fact that many Muslims with diabetes prefer to fast in spite of inhibitory advises and to answer several conflicts and controversies regarding diabetes and Ramadan, IDF in collaboration with Diabetes and Ramadan (DAR) International in Alliance decided to develop a comprehensive guideline to be used by health care professionals. This guideline was then developed on April 2016 by 12 main authors and 20 co-authors from all around the world, and published by International Diabetes Federation. The guideline is provided in nine chapters: 1) Introduction to the IDF-DAR Practical Guidelines, 2) Epidemiology of Diabetes and Ramadan Fasting, 3) Physiology of Ramadan Fasting, 4) Risk Stratification of Individuals with Diabetes before Ramadan, 5) Diabetes and Ramadan: A Medico-religious Perspective, 6) Pre-Ramadan Education, 7) Ramadan Nutrition Plan (RNP) for Patients with Diabetes, 8) Management of Diabetes during Ramadan and 9) Identifying and Overcoming Barriers to Guideline Implementation. This guideline tries to answer three main questions: 1) Is fasting during Ramadan associated with a significant risk? 2) What are the criteria that predispose patients with diabetes to increased risk during fasting? 3) What is the most appropriate oral anti-diabetic drug(s) or type and regimen of insulin for patients with type 2 diabetes who fast?

Managing Diabetes Safely During Ramadan Fasting by OHAs and Insulins: Research Evidence and Experience from Saudi Arabia

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Objectives: To study safe and effective Ramadan fasting (without significant hypoglycemia) with different OHAs and Insulins and significant HbA1c Reductions during Ramadan fasting. **Methodology:** Extensive pre-Ramadan diabetes education was provided to the patients. ANOVA statistical model was used to assess HbA1c levels among different education statuses. Serum creatinine was used to measure renal functions. Pre-Ramadan diabetes education with alteration of therapy and dosage adjustments for OHAs/insulin was done. Regression models for HbA1c before Ramadan with FBS before sunset were also synthesized as a tool to prevent hypoglycemia and successful Ramadan fasting in future. **Results:** Out of 1046 patients, 998 patients fasted successfully without any episodes of hypoglycemia. 48 patients (4.58%) experienced hypoglycemia. χ^2 Test for CRD/CKD with hypoglycemia was also significant (p-value < 0.001). Gliclazide-MR was found to be safer than other OHAs (glibenclamide, glimipride). Metformin, Sitagliptin and vildagliptin (DPP- 4 Inhibitors) were also safe during Ramadan fasting. Newer Insulin Analogs such as Humalog Mix50®, Basal insulin glargine, and Rapid acting Insulin Analogs (lispro, aspart and glulisine) in basal bolus format were also demonstrated to be safer than traditional or old insulins (Human Regular Insulin, NPH and Mixtard® Insulin). Significant associations and linear regression were found for HbA1c and sunset FBS; RBS post-dawn with RBS midday and FBS at sunset. The proposed regression models of this study can be used as a guide in future for Ramadan diabetes management. **Conclusion:** Although challenging, successful fasting can be accomplished if pre-Ramadan extensive education is provided to the patients. DPP-4 inhibitors, Gliclazide-MR, and newer Insulin Analogs (in basal bolus format) can be replaced with other OHAs and traditional Insulins during Ramadan fasting to reduce the risk of hypoglycemia and successful Ramadan fasting.

To Fast or Not to Fast- A Concern for Renal Patients

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Kidneys play a crucial role in control of body water, electrolytes and minerals. It is vital in formation of blood, has key role in Vitamin D and bone metabolism and is responsible for removal of waste products. Fasting is the willing abstinence or reduction from food and drink, for a period of time. Fasting is obligatory for every Muslim in month of Ramadan. Renal patients (patients with acute kidney injury, chronic kidney disease, stone disease, kidney transplant patients, and patients on maintenance hemodialysis) have concern about progression of their disease during fasting on one hand and will to fast for religious reasons on other hand. In this talk effect of Ramadan fasting on kidney diseases will be discussed and that whether renal patients should do fasting or not.

Medication Management during Ramadan fasting

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Fasting in Ramadan is one the five pillar of Islam. Thousands of Muslims observes fasting every year for a month. Where fasting provides spiritual benefits, it can also influence psychological and biochemical factors in patients observing fasting. These factors plays vital role in the efficacy of drug. Changes in these factors can bring changes in pharmacodynamics and pharmacokinetics properties of drugs. Patients who are receiving medications related to diabetic, pain and cardiac conditions are on high risk of harm due these changes. Understanding these changes and role of medications allows a healthcare professional to provide optimum care to patient in Ramadan.

Perception of Wellness Among People Fasting During Ramadan

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Background: Medicine since long has been concerned with the physical state of the body and how to revert the system's pathology back to its normal functioning form. This notion has stemmed from pathogenic paradigm of health and social sciences. In contrast to this prevalent pathogenic paradigm is the positive psychology paradigm which takes into account the subjective experiences, well being, satisfaction and happiness thus exploring aspects of health untouched by the aforementioned paradigm. Wellness is defined as "composite of physical, emotional, spiritual, intellectual, occupational and social health." All of which affects health significantly. Dunn stated that "we can no longer ignore the spirit as a factor in our medical and health disciplines." When studying wellness, taking into account individual perception is central to the accurate assessment. Several studies have explored the role of perception in health and found that self-related health perception is among the most powerful predictor of health outcome. Studies have shown that fasting is linked to physical and emotional well-being. This study was conducted to determine the perception of wellness among people fasting during Ramadan. **Methodology:** This was a cross-sectional survey carried out in Ayub Medical Teaching Institution between March and August 2018. A total of 168 participants including students and different cadre of doctors were included in the study. A non-probability non proportional quota sampling technique was used to select the study population. Perceived Wellness Survey (PSW) tool was used which is a 36 item, 6 point Likert scale instrument. Participants were assessed 2 weeks before Ramadan and during 4th week of Ramadan. Data was analyzed using SPSS version 20. **Result:** Out of the total participants 114 (67.8%) were male and 54(32.2%) were female. The mean age of participants was a 35.11 ± 7.44 year ranging between 19 and 59 years. There was significant increase in mean perceived wellness score between pre Ramadan 14.76 ± 3.55 and post Ramadan 16.36 ± 3.82 scores ($p < 0.05$). Significantly improved perceived wellness mean (13.72 ± 4.01 to 15.31 ± 3.12) was observed in diabetics during Ramadan ($p < 0.05$). **Conclusion:** Ramadan improves overall perceived sense of well-being not only in general population but also in people with chronic diseases like diabetes. **Key Words:** Perceived Sense of Wellbeing, Ramadan, Diabetes, Hypertension, Spiritual Wellbeing

Diabetes & Ramadan Recent Endeavours From Pakistan

Abdul Basit

Muslims constitute 1.6 billion i.e. 23.4% of the estimated 2010 world population of 6.9 billion. All healthy adult Muslims are obligated to fast during Ramadan each year. A decade ago, population based, retrospective study, Epidemiology of Diabetes and Ramadan (EPIDIAR), conducted in 12,243 patients with diabetes in 13 Islamic countries showed that 43% and 79% of patients with type 1 and type 2 diabetes reported fasting during Ramadan (EPIDIAR). The challenges were to define healthy with diabetes and to balance fasting obligation ensuring safety concerns. Also to avoid extremes of opinions (ifraathaurtafreeth) in religion and to respect patients values with modesty and scientific evidence. We needed studies without any particular molecule but biochemical testing was a challenge as there were myths of Roza and breaking fast with SMBG / insulin etc. Hence Ramadan Study Group was found in 2008 headed by Prof. Muhammad Yakoob Ahmedani. Diabetes education including dietary modifications were identified and a term pre ramadan counseling as they say pre-pregnancy counselling was labelled. Workshop and CMEs are conducted for educating doctors and diabetes educators. NADEP.Con and D-Net covered Ramadan comprehensively at national and international levels. Website has been developed. Educational material was developed. Major contribution was made for Conversation Map Tools (CMT) of Ramadan that was launched in Pakistan by BIDE Ramadan Study Group. 1st Diabetes Education Study Group (DESG) of the European Association for the Study of Diabetes, was held on March 12, 2013 at the British Muslim Heritage Center "BMHC", Manchester, UK. DAR International Alliance 3rd Forum, Dubai, was held on April 17, 2015. The forum was attended by International Faculty including Sir Michael Hirst, IDF President, Dr. Shaukat Sadikot, IDF President Elect, Dr Adel El-Sayed, IDF-MENA Region Chair, Dr Evariste Bouenizabila, IDF-Africa Chair, Dr Line Kleinbreil, DESG Chair, Dr. Abdel razzq Al-Madani, President of EDS, and many other experts in the field. DAR Core Group for development of Ramadan Guidelines has been formed. Future plans are to ensure safe fasting for millions in the community fast at primary care level. We need awareness for masses including dietary guidelines customized for local, regional, ethnic groups and religious aspects comprehensively covered including fasting in weather and time zone extremes. Translational research will eventually help in implementation of guidelines. It is important to mention that Islam is a comprehensive religion. (This day I accomplished the religion for you and perfected my blessings upon you and have chosen the religion of Islam for you). It proves that **Allah** has perfected the religion through **Hadrat Muhammad** and Islam has become a complete and perfect religion for all times to come. (Parah 6, Surah Maidah, Ayat 3)

Ramadan Specific Diabetes Education: Lessons Learnt

Muhammad Yakoob Ahmedani

Education of patients is identified as the cornerstone of safe fasting not only by physicians but also by diabetes educator and dietician. Clear and comprehensive Ramadan education should be provided to all patients with diabetes who intend to hold fast during the month of Ramadan. Studies have been conducted in patients with diabetes showing the importance of Ramadan-specific education for safe fasting. A cross-sectional descriptive study was undertaken among 274 general practitioners showed almost one third of the studied population across Pakistan lack the knowledge of basic principles that are important to be employed in the management of diabetes during Ramadan. Another multicenter study reported that health care providers should also be educated and trained to deliver appropriate advice in order to ensure safe fasting in people with diabetes during Ramadan. Ramadan prospective diabetes study showed that, with active glucose monitoring, alteration of drug dosage and timing, dietary counselling and patient education, the majority of the patients did not have any serious acute complications of diabetes during Ramadan. A retrospective study regarding Ramadan related awareness, practices & experiences of diabetic patients showed that the majority of diabetic people were fasting without any adverse events however 15-20% of them were at risk as they continued fasting without checking their blood sugar even when they felt hypoglycemia. Several studies proved that there is a need to provide more intensive education before fasting, to disseminate guidelines, and to propose further studies assessing the impact of fasting on morbidity and mortality. A study conducted at a Primary and a Tertiary care center at Karachi-Pakistan was observed that Ramadan-specific education level of patients at Tertiary care center was significantly better compared to patients at Primary care center. CARE study proved that patients who received Ramadan-specific diabetes education better compared with patients who did not receive education.

Effects of Ramadan fasting on Hypertensive and Diabetic Patients of Karachi

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This presentation will cover three studies conducted by the author and his undergraduate students. The first study was conducted on 75 Type 2 diabetic patients and the objective was to assess the effect on Ramadan fasting on blood pressure, fasting glucose, cholesterol, triglyceride, high density and low density lipoproteins. The second study was conducted on 117 hypertensive patients and the objective was to find out the effect of Ramadan fasting on blood pressure, physical activities and obesity. The third study was performed on hypertensive and diabetic patients with controls. One hundred fifty-five subjects were included in this study. First study showed that Ramadan fasting is safe for Type 2 diabetic patients and associated with weight loss and overall diabetic control. Furthermore, the fasting also reduces the waist measurement, systolic blood pressure, triglyceride and HDL. The second study concludes that fasting does not incur any harm for the hypertensive patients. Nevertheless, it significantly reduces the systolic and diastolic blood pressures. Factors such as changes in physical activities, sleeping patterns, and weight reduction, except for the number of fasting days, do not affect the fasting hypertensive patients. The third study inferred that fasting was benefitted, not only healthy subjects but also reduces the weight, blood pressure and fasting blood sugar.

Scientific Benefits of Keeping Fast During Ramadan

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New scientific data emerged recently to show the evidence that fasting improves overall health, particularly all the parameters of metabolic syndrome. Data from some recent studies will be presented. Moreover following benefits are observed: **Benefits on GIT:** Since absolutely nothing is taken during fast per orally, our GIT takes complete rest, just overhauling our system and metabolism. As we are aware, even if we take one bite during the day, it will activate hundreds of enzymes and hormones in our body, thus complete rest to alimentary tract is not possible. **Benefits on Hormone System:** As a person during fast remains calm, only bowing to God, his stress hormones are at minimal levels, which otherwise might've caused sympathetic stimulation, leading to hypertension, glucose intolerance and dyslipidemia. Moreover, our reward center in nucleus accumbens, in ventral tegmental area (VTA) in mesolimbic pathway is activated, as we are achieving and accomplishing one of essential component of Islam, and feel satisfied, thus releasing endorphin and other soothing hormones in our body. **Effect on Obesity and on Metabolic syndrome:** If we follow meticulously the spirit of fasting, we should lose our body weight as now we are eating two time instead of routine three time meals. Moreover, Taraweh and walking 5 times to go to mosque is pretty good exercise. Our namaz (prayer) itself is an excellent kind of exercise, as we note, almost every joint of our body is exercising during namaz. **Community Service:** During Ramadan we get a chance to meet our neighborers in mosque and other places more often than usual, thus knowing and sharing day to day mutual issues, which otherwise might have remained hidden from our sight.

Ramadan and Mental Health- The Concept and Benefits of Fasting

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Introduction: Abstinence from food and liquid for a defined period, is termed as Fasting. This ancient practice has been revered for ages as a health and spiritual tool. In the time of Hippocrates, fasting was prescribed to treat all manner diseases and religions have used it to help man open up to spiritual experiences. Fasting continuously for a month is regularly observed by Muslims during the month of Ramadhan every year. The mental effects of longer bouts of fasting have surprising effects. Researchers have reported improvements in mood, mental clarity, vigilance, a sense of improved well-being, and sometimes euphoria. There are major health benefits to Ramadhan/fasting or caloric restriction such as reduced risks of many chronic and fatal diseases ie Diabetes, Cardiovascular diseases, Cancer etc besides weight loss, slowing of the aging process, detoxification, controlling inflammatory response. It may help to overcome Addictions. The mood-boosting effects of fasting may be an evolutionary adaptive mechanism for periods of famine. Researches have revealed that therapeutic fasting improves depressive and anxiety scores in 80% of chronic pain patients after just a few days. But there are a number of implications in the field of medicine specially to note the fasting can lead to dehydration, headaches, sometime triggering migraines among patients, indigestion and worsen heartburn and peptic ulcer. Pregnant women, nursing mothers, malnourished people, and individuals with cardiac arrhythmias, renal or liver problems and cases with mood disorders need to take precautions during Ramadhan. Standardized protocols and guidelines will help clinicians while advising their patients with mental disorders during the month of Ramadan especially in relation to Bipolar affective disorder, substance use disorders, eating disorder, sexuality etc

Conclusion: This paper will emphasize that the effects of fasting are multifold and widely-ranged. Fasting can change brain chemistry, mood, and mental functioning to the point of reducing risk for neurodegenerative disorders but clinicians should be equipped to properly advise patients during Ramadhan with chronic diseases including mental illnesses. Moreover, there is a need of scholarly scientific researches on randomized large sample sizes representing different culture that address the queries encounter during every month of the year in the Muslim community.

Effects of Ramadan Fasting and Physical Activity on Blood Pressure, Blood Glucose Levels and Anthropometric Measurements in Diabetic and Hypertension Patients

Nazeer Khan, Sumayia Khan, Aymen Sattar, Sarim Memon, Naveen Khawaja, Kiran Naseem, Sidra Nehal, Afreen Kazmi, Fatima Zuberi

Objective: To determine the effects of Ramadan fasting and physical activity during Ramadan on blood pressure, blood glucose levels and anthropometric measurements in diabetic and hypertensive patients of Karachi. **Methodology:** A hundred and sixty-three volunteers were enrolled in the study, using convenient sampling and were categorized into four groups, namely 1) diagnosed hypertensive 2) diagnosed diabetic 3) diagnosed hypertensive and diabetic 4) healthy control group. Out of these, a hundred and fifty-five completed all three visits. Data was collected in the last ten days of Shaban, Ramadan and Shawwal 1437 H. In each visit blood pressure was measured and a drop of a sample was taken for measuring fasting blood glucose levels. A questionnaire was filled regarding demographic information, family history, drugs used for diabetes or hypertension, physical activities and diet, number of Traveeh prayed and days fasted. Anthropometric measurements were also taken. If a subject had fasted for less than 20 days, he or she had been excluded from the study. **Results:** Forty subjects were healthy individuals, 42 patients were hypertensive (and not diabetic), 32 patients were diabetic (and not hypertensive) and 41 patients were both hypertensive and diabetic. Sixty-seven (43.2%) participants were male. The mean age of participants was 54.88 (9.6) years. The mean height was 1.63 (0.097) m and mean weight of the participants in Shaban was 70.54 (13.92) kg. The mean weight of the subjects was significantly reduced from Shaban to Ramadan, but returned to previous measurements as in Shaban during Shawwal ($p < 0.0001$). Systolic blood pressure (SBP) significantly decreased in all the four groups from Shaban to Ramadan ($p < 0.0001$). Mean diastolic blood pressure (DBP) also reduced from Shaban to Ramadan in all the four groups ($p = 0.008$). The changes in the DBP amongst the four groups were also significant ($p < 0.0001$). Mean fasting blood sugar (FBS) also reduced from Shaban to Ramadan, but it was statistically insignificant. However, the changes amongst the four groups were statistically significant ($p < 0.0001$). There was no significant effect due to initial BMI and physical activities. Physical activity increased by 23% from Shaban to Ramadan due to inclusion of Taraweeh prayers and then decreased by 30% in Shawwal. The mean MET (Metabolic Equivalent of Task) of Shaban, Ramadan and Shawwal was 274.9 (± 563.4), 760.0 (± 687.7) and 233.9 (± 401.4). There was significant increase in Ramadan. Using MET value of 600 as the cut point for physically active and inactive subjects, the data showed that the active individuals in Shaban, Ramadan and Shawwal were 16%, 56.1% and 16.8% respectively. **Conclusion:** The study concludes that fasting is not only safe for hypertensive and diabetic Type 2 patients, but it also provides some beneficial effects such as increasing physical activity, reducing blood pressure and fasting blood sugar.

Effect of Ramadan on Lipid Profile, Glucose Level, Protein and Uric Acid Among Muslim and Non-Muslim Medical Students in a Public University of Karachi

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Objectives: To determine the change in lipid profile, glucose level, protein and uric acid due to Ramadan among fasting and non-fasting medical students in a public medical university. **Methodology:** Eighty-six Muslim students who intended to fast at least 20 days in Ramadan consented to participate in the study. Only 35 non-Muslim students consented to participate in the study as control. Students were requested to visit 3 times (last 10 days of Shaban, Ramadan and Shawwal) to fill a questionnaires and give blood samples for biochemical analysis. Blood pressure, height and weight were also measured in each visit. By the end we have only 59 Muslims students with at least 20 days of fast and 16 non- Muslims who have visited all the three times. Blood samples were analyzed for lipid profile, glucose level, protein and uric acid. **Results:** Mean cholesterol level increased insignificantly among Muslim students in Ramadan, but decreased significantly in Shawwal. However, there was significant different trend Muslim and non-Muslim. There was continuous increase in mean HDL value from Shaban to Shawwal in both Muslim and non-Muslim students. However, these upward trends were not significant different from each other. Furthermore, there was no significant difference between Muslim and non-Muslim changes. Mean LDL increased little bit among Muslim students in Ramadan but decreased significantly in Shawwal. Muslim and non-Muslim values of LDL showed different trend, but it was not significantly different. VLDL decreased significantly from Shaban to Ramadan. Mean triglyceride values kept downward trend during the study period, but statistically they were not significant. Mean protein level decreased insignificantly from Shaban to Ramadan, but increased significantly from Ramadan to Shawwal. Furthermore, there was significant difference in the trend of changes between Muslim and non-Muslim students. Mean glucose level (FBS) increased significantly in Ramadan and then decreased insignificantly in Shawwal among the students. Furthermore, Muslim and non-Muslim students showed significant differences for FBS. Mean uric acid did not show any significant difference neither during the three months, nor between Muslim and non-Muslim students. **Conclusion:** Study showed that the changes in Ramadan have mixed effects in lipid profile, glucose, protein and uric acid levels. **Key words:** Muslim students. Non-Muslim Students, Medical College, Ramadan Fasting. Lipid Profile

Effects of Fasting and Changes in Diet During Ramadan on Blood Pressure and Blood Glucose Levels in Diabetic and Hypertensive Patients

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Dow University of Health Sciences, Karachi

Objective: To determine the effects of Ramadan fasting and its associated changes in diet on blood pressure and blood glucose levels in diabetic and hypertensive patients. **Methodology:** 163 volunteers were enrolled in this study and were categorized into four groups, namely 1) diagnosed hypertensive 2) diagnosed diabetic 3) diagnosed hypertensive and diabetic 4) healthy control. Amongst these, 155 subjects completed all three visits. The data was collected in the last ten days of Shaban, Ramadan and Shawwal 1437 H. In each visit, the subjects' blood pressure was measured and a drop of a sample was taken for measurement of blood glucose. A questionnaire was filled which collected demographic details, family history, drugs used for diabetes or hypertension, physical activities and diet, number of Traveeh prayed and days fasted. Anthropometric measurements were also taken. Information about the food consumed in breakfast, lunch/ iftar and dinner of last two days before the interview was also recorded. Consumed calories, proteins, fat, carbohydrates, cholesterol and sodium values were calculated. **Results:** The patients were divided in four groups: 40 healthy subjects, 42 only hypertensive patients, 32 only diabetic patients and 41 patients that were hypertensive as well as diabetic. Sixty-seven (43.2%) participants were male. Mean age of participants was 54.88 (9.6) years. The mean calorie intake increased significantly from Shaban to Ramadan and then returned to almost the same levels in Shawwal. Mean protein levels decreased significantly from Shaban to Ramadan, and then increased but not up to previous levels in Shawwal. Mean fat levels similarly decreased insignificantly from Shaban to Ramadan, but increased in Shawwal. Mean carbohydrate levels increased significantly from Shaban to Ramadan, and returned back to the same levels, significantly decreasing in Shawwal. Mean cholesterol level of the consumed food was decreased significantly from Shaban to Ramadan and increased back significantly in Shawwal. Mean levels of sodium increased significantly from Shaban to Ramadan and decreased significantly in Shawwal. The trend of changes did not vary significantly amongst the four groups of subjects mentioned previously. **Conclusion:** Although changes in diet may normally have undesirable effects on fasting blood glucose levels and blood pressure, long hours of fasting in Ramadan negate these effects and are instead beneficial in improving these parameters.

Effect of Maternal Fasting on Fetal Weight

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Objectives: To determine the effect of maternal fasting on fetal weight. **Methodology:** This is an initial report of the above-mentioned study. This study is being conducted on 511 pregnant women, who visited the Gynecology and Obstetrics ward, in Jinnah Postgraduate Medical Center. The data were collected during the month of Ramadan, 1440 H. After informed consent, pregnant women presenting to gynae and OBS OPD were interviewed and data were collected using structured questionnaire. **Results:** The mean age of the participants was 25.18 (± 4.78) years (Range 15-40 years). Seventy-eight percent of the women had education lower than secondary level. Most of the participants belonged to lower socio-economic group (69% had income less than Rs. 20,000/-). Among the visited patients, 497 (97%) were housewives and remaining 14 (3%) were working women. However, the difference was not statistically significant. Most of the housewives (80%) did not fast for more than 20 days. The women with history of C-section were 17.8%. The women taking multivitamins, calcium/vitamin D, folic acid and iron supplements were 42.1%, 27.4%, 70.8%, 64.8%, respectively. **Conclusion:** The participants belonged to lower socioeconomic group and most of them were housewives who fasted less than 20 days, and were taking the prescribed medicines such as multivitamins, calcium/vitamin D, folic acid and iron supplements. **Key words:** Maternal fasting, fetal weight, Ramadan, JPMC

A Cross Sectional Study to Assess the Impact of Fasting on Self-Esteem (Using Rosenberg Self –Esteem Scale)

During The Month of Ramadan

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Objectives: Fasting plays a major role in reinvigoration of body's spirit and improving the mental health. The present study was carried out to assess the impact of fasting on an individual's self-esteem during Ramadan. **Methodology:** It was a two-month Observational Descriptive Cross-Sectional study survey carried out during the Islamic months of Ramadan and Shawal among the medical students of Gujranwala Medical College, Gujranwala. Using convenient sampling, 50 Muslim medical students (who intended to fast during 30 days of Ramadan) were randomly selected from the 5 classes of MBBS. The data collection tool comprised of two parts, the demographic variables and a 10-item Rosenberg Self-Esteem Scale. The Data was collected during first 5 days of Ramadan and first 10 days of Shawwal and was analyzed using SPSS version 22. A 5-point Likert scale was used giving a total score of 30. **Results:** The overall response rate was 92 % (46/50). The mean age of the respondents was 22.304 (SD+/-1.159). 19.56 % (9/46) were males while 80.43 % (27/46) were females. The total mean score calculated for self-esteem during the first five days of Ramadan was 16.70(SD+/-1.782) while that during the first 10 days of Shawal was 19.34(SD+/-2.75). The minimum self-esteem scores during Ramadan and after Ramadan were 13 and 14 respectively while the maximum scores were 20 and 27 respectively. **Conclusion:** The research study showed that fasting during the month of Ramadan has positive impact on the self-esteem of Muslim medical students. **Key words:** Ramadan, Fasting, Self-esteem

Fasting by Muslim Pregnant Women during Ramadan: A Cross-Sectional Study

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Objectives: Unsafe fasting during Ramadan by diabetic patients may lead to severe complications in the patients in form of dehydration, diabetic ketoacidosis, hypoglycaemia or hyperglycaemia, which may sometimes be life-threatening. This study aims to assess the knowledge and practices of diabetic patients towards fasting during Ramadan. **Methodology:** It was a one-month observational descriptive cross sectional study which was carried out in public and private sector hospitals of Punjab province of Pakistan during the month of Ramadan 2019. The sample size calculated for the study was 50. The questionnaire comprised of demographic variables and questions to assess the knowledge and practices of patients regarding safe fasting of diabetic patients during Ramadan. Data was entered and analysed in SPSS (version 22). P-Value was set at 0.05. **Result:** The overall response rate was 92 % (46/50). 46% respondents were males and 54% were females. The mean age of respondents was 60.64+/- 13.28 years. The mean duration of diabetes was 5.1 years. 67% of the respondents fasted during Ramadan. 41% consulted their doctor for assessment and guidance towards safe fasting. 81% admitted to have changed their diet during Ramadan. 39% and 23% experienced hypoglycaemic and hyperglycaemic episodes respectively with majority off them being unaware of the symptoms. 78% said that they were unaware of practices for fasting safely during Ramadan. **Conclusion:** It is apparent that there is poor knowledge regarding safe practice during Ramadan amongst diabetic patients. There is need to overcome this barrier through proper guidance and counselling prior to Ramadan. **Key words:** Ramadan, Diabetes Mellitus, Fasting

Knowledge and Practice of Doctors Regarding Management of Diabetes Mellitus Type I During the Month of Ramadan

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Purpose/ Objectives: Provision of optimum management and care to the patients suffering from Diabetes Mellitus type II, who intend to fast during Ramadan, is very challenging for the doctors. This study aims to assess the knowledge and practice of doctors regarding risk stratification, dietary and pharmacological interventions, identification of complications, and blood glucose monitoring during fasting and also to identify the major barriers towards safe practice of diabetic patients during Ramadan. **Methodology:** This is an observational descriptive cross-sectional study conducted in hospitals of Punjab during the month of Ramadan of 2019. Thirty doctors were interviewed using a questionnaire including demographic data and knowledge and practice regarding the management of diabetes type 2 patients. **Results:** The overall response rate was 86.67%. 46.15% respondents were males and 53.84% were females. The mean age of respondents was 27.88 +/- 3.91 years. The total mean score of knowledge and practice was calculated as 17.69 +/- 0.54, the maximum and minimum scores being 23 and 11 respectively. 19.23% exhibited poor score, 69.23% had good score, while only 11.53% secured excellent score. The biggest barrier towards the safe practice of fasting diabetic patients was found to be the lack of knowledge of doctors and lack of privacy and counselling in hospitals. **Conclusion:** Overall, the doctors had good knowledge and exhibited safe practice towards management of diabetic patients intending to fast during Ramadan. **Key words:** Doctors, Ramadan, Diabetes Mellitus type 2

Achieving Safer Ramadan Fasting by Keeping Flexible Glycemic Targets During the Day and Tighter Targets During the Night in Insulin Treated People with Type 2 Diabetes

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Aim: To observe the effect of keeping flexible glycemic targets during fasting and tighter targets during non-fasting hours in insulin-treated people with type 2 diabetes during Ramadan. **Methods:** This prospective study was conducted at Baqai Institute of Diabetology and Endocrinology in 2014. People with T2DM on split mixed insulin therapy were recruited. The pre-Ramadan education given and insulin doses were adjusted before Ramadan. 24- hour telephonic helpline service was provided to achieve pre-determined glycemic targets and minimize complications. **Results:** A Total of 54 people with T2DM with a mean age of 54.65 ± 9.32 years were recruited. Mean glucose achieved were 183.50 ± 30.91 and 179.20 ± 36.27 during the day and night respectively. Mean HbA1c (p-value < 0.0001) and serum creatinine (p-value 0.0010) significantly improved at the end of Ramadan. 0.6% episodes of hypoglycemia including one major hypoglycemia while 30% of episodes of hyperglycemia were recorded. No hospitalization needed. **Conclusion:** By keeping flexible glycemic targets during the day and tighter targets during the night, safe fasting was feasible with significant improvement in overall glycemic control without the development of major complications. **Key words:** Fasting, Ramadan, Type 2 Diabetes, Loose glycemic control, tight glycemic control

**Pattern of Psychiatric Out-Patients:
Comparison Among 6 Years Consecutive Cases
Presented during Ramadan and Rest of the Months of Years**

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Background/objective: Mental illness accounts for about one-third of the world's disability. It is estimated that 350 million individuals experience depression annually. Spirituality and religious behavior have phenomenal effect on mental health. Thus fasting in Ramadan may affect both individual physical and mental health as well as behavioral environment within the society. The present study has been carried out to compare the frequency and pattern of psychiatric disorders among patients presented during the months Ramadan and rest of the years. **Methodology:** Retrospective chart review was conducted on all cases (ages 12 - 83 years) presented at a private psychiatric clinic (N = 2824) between January 2013 and December 2018 for demographic information and Psychiatric disorders (ICD- 10). The variables included were Sociodemographic information, education, age, gender, number of siblings, profession, mother tongue, substance abuse and psychiatric disorders. The data was divided into Ramadan and rest of the months according to the Hijri calendar of last six years. **Result:** The findings showed that there were 58.2% males from 2013 till 2018. Amongst them, 3.5% patients visited during month of Ramadan while 96.5% were during non-Ramadan days. Approximately 43.8% males and 28.6% females had mood disorder, 36.9% males and 22.1% females had non-psychotic disorder and 44.6% females diagnosed with psychotic disorders presented during Ramadan while in non-Ramadan days, 41.3% & 38.1% males with mood disorder & non-psychotic disorders respectively while 50% females had psychotic disorder, 21.3% with mental disorder due to underlying physiological condition and 20.7% had substance use disorder. **Conclusion:** Strong association was found among psychiatric disorders presented during Ramadan and non-Ramadan in females ($p < 0.0001$) while no such significant association was found among males ($p = 0.509$).

Safety of Ramadan Fasting in Ramadan for Individuals Suffering From Type 2 DM in Pakistan

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Background: Whether diabetics should fast or not in the Holy month of Ramadan has been a controversial idea since long. The answer is not a simple yes or no. It confers safety measures to be known thoroughly by the diabetic such as when to breakfast, what are the hypoglycemic cutoffs hence doing multiple SMBGs (self-monitoring of blood glucose) is essential. Also certain drugs and insulin regime imposing risk of such events have to be altered in the pre-ramadan visit to ensure safety for the fasting individual. We aim to determine hypoglycemic events and safety of Ramadan fasting among individuals with Type 2 DM in our study. **Methods:** This was a retrospective observational study enrolling all patients who decided to fast in the month of Ramadan aged >18 years and coming to primary health care center in Sikanderabad and Clifton general practice clinic who gave consent to participate in the study. Exclusion criteria is Type 1 DM, GDM, drug induced Diabetes and MODY. A total of 103 participants were included in the study. Data was captured pre- Ramadan, during Ramadan and after Ramadan in the year 2019. Mean and standard deviation was taken for numeric data. Frequency and proportion was assessed for categorical variables. Multivariate Logistic regression was computed and chi-square was taken to see the association of risk factors with hypoglycemic events P-value <0.05 was considered significant. **Results:** Mean age of the patients was 44.6kg+10.15. Mean HbA1c before Ramadan was 9.2%+2.1 and after Ramadan was 7.7%+1.4 (P-value<0.00) showing a reduction of 1.5%. Mean weight of the patients before Ramadan was 68.3kg+1.6 and mean weight during Ramadan was 64.8kg+1.4(p-value <0.00) showing a dip of 3.5 kg however mean weight 1 month after Ramadan was 66.5kg+14.9 depicting a rise again of 1.8kgs. There were 66% (68) males and (34%) 35 females in our study. Higher the risk category of American Heart Association, higher hypoglycemic episodes were seen in our study (p value 0.00). Physical activity /week did not seem to be associated with hypoglycemia in our study (p-value 0.00). Those who had hypoglycemic events before Ramadan were more prone to have hypoglycemia during Ramadan (p-value 0.00). Those who were on basal bolus combination insulin had more hypoglycemic events followed by premixed insulin then basal only insulin regime, all statistically significant (p-value 0.00). Use of GLP-1 receptor agonist was not associated with hypoglycemia however metformin plus sulphonylureas usage was associated with hypoglycemias. Pre-Ramadan counseling was associated with less hypoglycemic events however the result was not statistically significant (p-value 0.586). No episode of DKA seen in our study. **Conclusion:** According to our study, Ramadan fasting proved to be quite safe in individuals with Type 2 DM. Use of basal bolus insulin, pre-mixed insulin, metformin plus sulphonylureas usage, hypoglycemic episodes before Ramadan, higher ADA risk category, no pre-Ramadan fasting education and less number of SMBGs were associated with hypoglycemia during fasting. **Key words:** ADA (American Diabetic association), SMBGs (Self-monitoring of blood glucose), DKA (Diabetic Ketoacidosis)

Effect of Ramadan Fasting on the Weight of Patients with Diabetes

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Objective: Ramadan fasting can be associated with favorable physiological changes among healthy individuals, such as decreased body weight. Due to the shifts in hunger-satiety cycles during Ramadan the feeling of hunger intensifies and may result in consumption of large caloric intake, leading to over-all weight gain. However, a review on weight change during Ramadan showed that body weight typically decreases or remains stable during Ramadan. **Methodology:** A prospective observational study was planned to observe the association of weight change in fasting people with diabetes with respect to dietary compliance during Ramadan. All the participants intending fasting were given dietary guidance to follow during. Demographic characteristics and food records were collected. Compliance score was given accordingly. **Results:** It was observed that 40% were complaint to the dietary advice while 60% of people were non-complaint. A total of 36.7% had increase their weight 46.7% had decreased and 16.7% had no change in their weight. Among patients who were compliant, 66.7% people had decreased their weight, 25.0% had no change and 8.3% people had increased their weight significantly ($p=0.031$). Among patients who were non-compliant, 11.1% people had decreased their weight, 33.3% people had no change in their weight while 55.6% people increased their weight significantly ($p=0.031$). **Conclusion,** with dietary compliance significant reduction in weight was observed in people with diabetes who fast during month of Ramadan and this behavioral change of eating less but according to nutrient need can be used as motivational factor to reduce weight in the following months after Ramadan.

A Comparative Study of Cases of Road Traffic Accidents in Ramadan and Other Months in Karachi

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Purpose/ Objectives: The objective of the study is to determine the frequency and nature of Road Traffic and rates of accidents in months of Ramadan and other months from 2014 to 2018 in different time periods of the day. **Methodology:** This retrospective study was conducted on the records of medicolegal centers of all government hospitals of Karachi (Jinnah/ Civil / Abbasi Shaheed Hospital) from 2014 to 2018. The data were collected for the all the reported cases of Road Traffic Accidents (RTA) in Ramadan and other months during the above mentioned period. **Results:** will be presented in the conference. **Conclusion:** will be presented in the conference.

Major Complications Among IDF-DAR Risk Categories of People with Diabetes during Ramadan; A Multicenter Study

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Background/Objective: “To determine the frequency of major complications among IDFDAR risk categories of people with diabetes during Ramadan; a multicenter study”. Consensus guidelines by IDF-DAR published in the year 2017 classified fasting individuals with diabetes into three risk categories i.e. very high-risk category, high risk category and moderate/low risk category. The evidence regarding complications in patients with diabetes during fasting was insufficient. Therefore, the aim of this study was to determine the frequency of major complications among IDF-DAR risk categories of people with diabetes during Ramadan; a multicenter study. **Methods:** This prospective observational study is ongoing in patients presented at the outpatient department of Baqai Institute of Diabetology and Endocrinology, a tertiary care diabetes unit in Karachi, Pakistan. Patients will be recruited between March-April 2019. All patients with diabetes regardless of age, gender, co-morbidities, duration of diabetes who intended to fast in Ramadan and fall in any one of three categories of IDF-DAR risk stratification groups were recruited through non probability convenient sampling a month before Ramadan after given a proper education counselling session. Those patients who were not willing to fast, didn't give consent to participate, critically ill patients, or patients with known psychiatric illness were excluded. Informed verbal consent was taken from all participants. Ethical approval was taken from Institution Review Board (IRB) of Baqai Institute of Diabetology and Endocrinology. Questionnaire was designed in 2 sections, section A comprised of data a month before Ramadan which included patient's demographic profile and questions regarding categorization according to risk stratification groups while section B included post Ramadan follow up data which was comprised of questions regarding complications (major hypoglycemia, major hyperglycemia, DKA/HHS, breaking the fast and/or hospitalization) during Ramadan. **Results:** will be presented in the conference. **Conclusion:** will be presented in the conference.

Publication Trends in Ramadan and Health: A Bibliometric Analysis of Top Cited Articles

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Purpose/ Objectives: This paper reports the literature on Ramadan fasting and health through bibliometric analysis of the top one hundred cited publications on Ramadan fasting and health. **Methodology:** The Web of Science database was searched on June 2019 using search terms "Ramadan" AND "Health" OR "Fast*" to identify the top one hundred cited articles published during the years 2004 to 2019. From the included manuscripts, following information was extracted for analysis: Total and average citation per year, name of first author, country and institute of origin, journal name, year of publication, type of study. The descriptive analysis was performed using Statistical Package for Social Sciences (SPSS) software (version 20). Coauthor collaboration and frequent keywords were analyzed using Visualization of Science (VOS) software (version 1.6.11). **Results:** Among the top one hundred cited articles, the most cited article on the list received 256 citations and last article received 18 citations. The journals with highest contributions are Journal of Sports sciences and author is Anis Chaouachi (n=5). The most prominent institution contributed to top cited papers is National Center of Medicine and Science in Sports, Tunisia (n=7). Majority of the top cited studies are original studies (n=83). **Conclusion:** This bibliometric study presents top cited papers, profiles of authors and Institutions contributing to Ramadan and health research. These top cited articles could serve as a guide for clinicians and researchers for future clinical practice and research in terms of prescribing more suitable treatment regime along with updated medical advice. **Key words:** Ramadan fasting, Ramadan research, Public health, Web of Science, Research output, research evaluation.

To Determine the Frequency of Major Complications among Fasting People with Diabetes According to Risk Categories of IDF-DAR Guidelines 2016

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Objective: To determine the frequency of major complications among fasting people with diabetes according to risk categories of IDF-DAR guidelines 2016. **Methods:** This prospective observational study was conducted around Ramadan of 2017, at Baqai Institute of Diabetology and Endocrinology, Karachi, Pakistan. People with diabetes having intention to fast during Ramadan were recruited. Demographic data collection along with risk categorization was done during pre-Ramadan visit. Structured education was given on one to one basis to each of the study participants. Assessment of complications was made during post Ramadan visit. **Results:** There were 131 participants in this study. Mean age was 53.77+12.67 years. Sixty-three percent were males. 4.58% were of type 1 diabetes while 95.41 were of type 2 diabetes. Mean duration of diabetes was 9.92+7.752 years and mean HbA1c was 8.711+1.878. Major hypoglycemia occurred in 31.2% of very high-risk category only. None of the high risk and moderate/low risk categories had major hypoglycemia. There was no major hyperglycemia noted in any of the categories of patients. 50% of very high risk and 3.3% of high-risk category required breaking of fast. None of the participants required hospitalization. **Conclusion:** In this prospective study, majority of fasting people with diabetes fall into high risk category and did not develop major complications. Very highrisk category had highest number of complications while low to moderate category develop none. Further large-scale studies are needed to validate our finding. **Key words:** Diabetes, Complications, Ramadan, Risk categories

To Determine the Frequency of Depression, Anxiety, and Stress Symptoms among People with Diabetes During the Month of Ramadan

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Objective: To determine the frequency of depression, anxiety, and stress symptoms among people with diabetes during the month of Ramadan **Methods:** This observational study was conducted by Ramadan Study Group of Baqai institute of Diabetology and endocrinology between May-July 2017. All patients who gave consent were included. A questionnaire based interview was conducted on one to one basis. Baseline data including age, sex, BMI, duration of diabetes and Hb1c was recorded. DASS-21 scale was used to assess depression, anxiety and stress pre and post Ramadan. **Results:** A total of one hundred and fifty people with diabetes participated from which 100 people were in fasting group (42 males and 58 females) and 50 were in non-fasting group (21 males and 29 females). In fasting group pre- Ramadan depression, anxiety and stress symptoms were present in 44%, 46%,35% of people which improved to 23%, 26%, 22% post Ramadan respectively (p-value significant). In non-fasting group pre-Ramadan depression, anxiety and stress symptoms were present in 42%, 44%,38% of people which improved to 38%, 34%, 32% post Ramadan respectively (p-value insignificant). **Conclusion:** In this study we found significant improvement in depression, anxiety and stress symptoms in fasting patients with diabetes during Ramadan. Large scale studies are needed to further validate our findings. **Key words:** Depression, Anxiety, Stress, Diabetes Mellitus

To Observe the Effect of Fasting on Renal Functions in People with Diabetes Mellitus Type 2 During Ramadan

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Background/Objective: Fasting in the month of Ramadan is one of the five fundamental pillars of Islam. Ramadan is the 9th month according to the Lunar Calendar. During Ramadan, Muslims fast from just before dawn (Sehri) till sunset (Iftar). During this, one has to abstain from eating or drinking. Children, very elderly people and Muslims on risk for health are exempted from fasting. Duration of fasting can range from 11 to 18 hours and may affect water balance and renal function especially in sick patients. Evidence regarding renal function in patients with diabetes mellitus type 2 in relation to fasting is insufficient. Therefore, the main purpose of this study is to observe the renal functions in fasting patients with diabetes mellitus type 2 during Ramadan. To observe the effect of fasting on renal functions in people with diabetes mellitus type 2 during Ramadan. **Methods:** This prospective observational study is ongoing among patients attended outpatient department of Baqai Institute of Diabetology and Endocrinology, Karachi. Patients will be recruited between March-April 2019. Patients were attended by non-probability convenient sampling technique. All patients with type2 DM were selected except the patients who did not give consent or critically ill patients are excluded. Data was gathered using pre designed close ended questionnaire, which contains patient's demographic profile and renal functions test. **Results:** will be presented in the conference. **Conclusion:** will be presented in the conference

Assessing the Awareness and Care of People with Diabetes Related to Ramadan Fasting: A Cross Sectional Study From Pakistan

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by Baqai Institute of Diabetology and Endocrinology, Karachi

Objective: To assess awareness and care of people with diabetes related to Ramadan fasting across the country. **Methodology:** This cross-sectional survey was conducted by Baqai Institute of Diabetology and Endocrinology, between November 2016 to March 2017, using convenient sampling. The physicians involved in the care of people with diabetes were invited to participate. A preformed validated questionnaire was used to conduct face to face interview on one to one basis. **Results:** Altogether 2,187 people with diabetes participated. Misconceptions were common (57.02%), The knowledge related to Ramadan fasting was poor (35.64%) and unsafe practices (55.62%) were highly prevalent. One third (31.9%) of the subjects did not receive pre-Ramadan education while in (43.1%) of the patient's doses were not altered. **Conclusion:** In this cross-sectional survey, we observed lack of awareness, misconceptions and unsafe practices among fasting people with diabetes, across the country. Its need of the time to start awareness campaigns as comprehensive care is not widely available. **Key words:** Diabetes, awareness, fasting, misconceptions, education

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