FALL ISSUE

2009

GULF COAST SOCIETY OF HEALTH-SYSTEM PHARMACISTS

AUGUST/SEPTEMBER

President's Report

Richard Cadle, RPh, PharmD, BCPS, FASHP

While listening to Bill Jones, a national Veterans Affairs pharmacy leader talk on "The Pharmacist's Code of Ethics: Just Guidelines or Actual Rules?" at Veterans Affairs Regional meeting in 2009 Spring Meeting, I was struck by the significance of the slide relating to "Ethical Responsibilities" where pharmacy must better establish itself as a healthcare profession.

This made me realize that guidelines or not, we have an ethical obligation. I recall an article I acquired many years ago from my residency program director at the start of my career, "Incomplete Professionalization: The Case with Pharmacy," (Norman R. Denzin and Curtis J. Mettlin), Social Forces, XLVI (1968), 375-382. This article discusses the difference between an occupation and profession claiming that pharmacy was a "marginal-occupation or quasi-profession." Back in the 1960's, surveys found that a large number of pharmacists entered the work force with the hopes of advancing their own careers as opposed to committing themselves to the goals and objectives [ethics] of the profession. Professions maintain themselves through time by forming organizational structures which direct the efforts and activities of their members, including the teaching and enforcement of the Code of Ethics.

Although pharmacy has several national, state and local societies, these organizations have been generally ineffective in representing and guiding the profession as a whole; for example, we are the medication experts but are not reimbursed for a cognitive service. Medication Therapy Management is one opportunity to better advance our field as a healthcare profession. True professions demand greater commitment from their students as well as their seasoned veterans, which is why I try to share this article with students, residents and new colleagues because of its thought provoking insights into the relationship between the practice of pharmacy and other health professions. Our Code of Ethics for Pharmacists has come a long way since 1848. I ask you as members of GCSHP, to what extent are we an occupation or a profession?

Greetings GCSHP members! We continue to improve our new GCSHP website, linked to the TSHP website which has all kinds of information including membership, previous newsletters, and upcoming events posted for members. This year has been a challenge in regards to Continuing Education. This is due to new rules in CE funding that have impacted every chapter in the state which has led the Board to discuss other options including self-funding future events. On a positive note, GCSHP is financially solid. We are one of the most financially secure chapters within TSHP which will allow this year's and future Boards the flexibility to fund whatever you feel is important; and will allow us to fund philanthropic events coming up in this Fall. We have sponsored ASHP leadership training for student SSHP presidents from TSU and UH, student scholarship opportunities, and in November 2009 will be sponsoring the University of Houston Residency Program Showcase. Lastly, we want to hear from you regarding suggestions to improve the organization. As President, I am interested in hearing from all members. Remember, your feedback is vital to make this organization thrive. Feel free to call or email me anytime. With warm regards,

Richard Cadle

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Continuing Education Program

Thursday, October 1, 2009

Maggiano's Little Italy

2019 Post Oak Blvd

Houston, TX 77056

5:30pm—6:00pm (Dinner/Registration)

6:00pm—7:00pm (CE)

See page 3

Schedule of Events

- ⇒ August 24, 2009
  Fall Semester Begins
- ⇒ August 25, 2009
  UH Officer Induction Ceremony
- ⇒ August 26, 2009
  UH Student Social
- ⇒ September 7, 2009
  Labor Day
- ⇒ September 25, 2009
  UH Clinical Skills Competition
- ⇒ October 1, 2009
  Febrile Neutropenia CE
- ⇒ October 3, 2009
  Komen Race for the Cure
- ⇒ October 8, 2009
  TSU/UH Fall Seminar
- ⇒ October 23, 2009
  TSU Clinical Skills Competition

August 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23 30	24 31	25	26	27	28	29

September 2009

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Fall Beginnings

The Prevention and Management of Febrile Neutropenia in Oncology Patients

ACPE Activity #204-000-09-427-L01P

Credit Hours: 1.0

Registration Link: http://www.ashpadvantage.com/fn

Date: Thursday, October 1, 2009

Time: 5:30pm – 6:00pm (Dinner/Registration), 6:00pm – 7:00pm (CE)

Location: Maggiano's Little Italy
2019 Post Oak Boulevard
Houston, TX 77056
713-986-4342

Activity Description

Patients with cancer face many challenges associated with their disease and treatment. One potential complication is febrile neutropenia, which has a negative impact on patient outcomes and may even result in death. Febrile neutropenia remains a significant complication in oncology patients despite the availability of national guidelines for its prevention and treatment. This activity will focus on preventing and managing febrile neutropenia. Using patient case examples, the faculty will engage participants in the clinical decision-making process involved when assessing a patient's risk of febrile neutropenia, developing a prophylaxis strategy, and managing febrile neutropenia when it occurs.

Learning Objectives

At the conclusion of this knowledge-based continuing pharmacy education activity, participants should be able to

Summarize national guidelines for risk assessment and prevention of febrile neutropenia.

Given patient case information, evaluate the patient's risk for developing febrile neutropenia.

Given patient case information, recommend a prophylactic drug regimen to prevent febrile neutropenia.

Describe treatment options for a patient who develops febrile neutropenia.

Continuing Education Information

The American Society of Health-System Pharmacists is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This activity provides 1 hour (0.1 CEU) of continuing pharmacy education credit (ACPE Activity #204-000-09-427-L01P).

Attendees must complete a Continuing Pharmacy Education Request online and may immediately print their official CPE statements at the ASHP Learning Center at http://ce.ashp.org.

Faculty

Michael Vozniak, Pharm.D., BCOP

Hematology/Oncology Clinical Pharmacy Specialist

Hospital of the University of Pennsylvania

Philadelphia, Pennsylvania

Planned and conducted by ASHP Advantage.

This activity is supported by an educational donation provided by Amgen.

For complete program information, please visit http://www.ashpadvantage.com/fn.

STUDENT SECTION

Texas Southern University SSHP
Celia Fenceroy, President

TSU-NOW!

It's been an exciting and challenging summer for many Texas Southern University's SSHP members. Many SSHP members took on very exciting internships with institutions and local retailers.

On August 10th, an orientation was held for the new Class of 2013. SSHP officers spoke to nearly 110 students about SSHP's purpose and goals for the upcoming year. The response from first year professional students has been great. On August 26, SSHP hosted the annual membership drive.

Currently, SSHP is preparing 4th year professional students for MIDYEAR in Las Vegas. MIDYEAR is a very exciting time for many PharmD candidates. We wish all P4's the best!

TSU-SSHP is also looking forward to working with the GCSHP and U of H SSHP chapter this Fall and Spring.

TSU-SSHP and the university as a whole are growing personally and professionally with our new university President, John Rudley. This will be one of our finest years.

SSHP would like to give a big THANKS to the previous officers and announce new officers for 2009-2010.

Celia Fenceroy (President)

Kingsley Nwogu (President-Elect)

*Gift Nweke *(Vice President)

*Pauline Nwachukwu *(Secretary)

*Rakiya Wada *(Treasurer)

*Prinya Charoennimuang *(Historian)

Our upcoming events include the TSU clinical skills competition, TSU/UH Fall Seminar, guest speakers during TSU-SSHP monthly meetings, mock residency interviews and fundraisers.

Pearls of Wisdom:

"Character cannot be developed in ease and quiet. Only through experience of trial and suffering can the soul be strengthened, vision cleared, ambition inspired, and success achieved."

~ Helen Keller ~

Celia Fenceroy

University of Houston SSHP
Amy Moss, President

UH-SSHP would like to congratulate the class of 2013! We wish you all the best as you begin your journey through pharmacy school. I would also like to congratulate the UH-SSHP 2009-2010 Executive Committee:

President – Amy Moss (P3)

President Elect – Avani Desai (P2)

Vice President of Programming – Jeffrey Joe (P3)

Vice President of Communications – Daniel Ortiz (P3)

Secretary – Christina Tan (P2)

Treasurer – Britney Ross (P3)

Historian – Tara Busch (P2)

The officers held their first official meeting during our annual retreat in May.

This was an opportunity to plan for the fall 2009 semester and to get geared up to meet the class of 2013!

During the August orientation we promoted our first meeting as well as the annual aquarium social. Both of the events went very well with an excellent turnout. At our first meeting on August 25 Dr. Richard Cadle inducted the officers and spoke to over 100 first and second year students about GCSHP!

This Year UH-SSHP will host meetings every first and third Tuesday of each month on the UHCoP main campus. This Semester's meetings will feature topics about solid organ transplant, internal medicine, ID, fertility, and pediatrics. The TMC campus meetings will be on the second and fourth Monday of each month. These meetings will include journal club and question / answer sessions with residents that are in involved in various areas of pharmacy. Monday, September 14 is the first TMC meeting and Dr. Jeff Sherer will introduce journal club.

It has been a busy start but we are not even close to slowing down! Below are our tentative plans for the fall semester:

September

25th UH Clinical Skills Competition

October

3rd Race for the Cure

TBD 4th Annual TSU/UH Fall Seminar

TBD Antibiotic Awareness Project

November

6th UH Annual Residency Showcase

Shoe and Sock Drive

December

6th-10th ASHP Midyear Clinical Meeting- Las Vegas, Nevada

UH-SSHP experienced some changes regarding our advisors this summer. First, we would like to give a huge, heartfelt thank you to Dr. Steven Pass, our Immediate Past Chapter Co- Advisor, for all of his dedication and support. We will miss him dearly and wish him the absolute best in his move to Dallas. As we say goodbye to Dr. Pass, we would like to welcome our new Chapter Co-Advisor, Dr. Jessica Cottreau! We are thrilled to have her support and look forward to working with her this year. Finally, we want to thank Dr. Kimberly Birtcher for her continued support, dedication and expertise that she provides for us on a daily basis.

To end on a good note, UH-SSHP is thrilled to be an ASHP Recognized Student Society this year! This is possible only because of the dedication and hard work that the officers put into this chapter each semester. Many Thanks.

We are looking forward to the fall semester, and we wish everyone the best this year!

Warmest Regards,

Amy Moss

STUDENT SECTION

UH Officer Induction Ceremony

August 25, 2009

UH Student Social Downtown Aquarium

August 26, 2009

STUDENT SECTION

Christi Parker
University of Houston College of Pharmacy
Pharm.D. Candidate 2010

EXFORGE HCT®

(amlodipine, valsartan, hydrochlorothiazide)

Manufactured by: Novartis

FDA approval received April 30, 2009

Therapeutic Class - Antihypertensive

Angiotensin II receptor blocker

Dihydropyridine calcium-channel blocker

Thiazide diuretic

Similar Agents

Azor (amlodipine, olmesartan)

Exforge (amlodipine, valsartan)

Diovan HCT (valsartan, hydrochlorothiazide)

Several angiotensin II receptor blocker and hydrochlorothiazide combinations

Pharmacology

Amlodipine inhibits calcium ions from entering the "slow channels" or select voltage-sensitive areas of vascular smooth muscle and myocardium during depolarization, producing a relaxation of coronary vascular smooth muscle and coronary vasodilation; increases myocardial oxygen delivery in patients with vasospastic angina.

Valsartan produces direct antagonism of the antiogensin II (AT2) receptors. It displaces angiotensin II from the AT1 receptor and produces its blood pressure-lowering effects by antagonizing AT1-induced vasoconstriction, aldosterone release catecholamine release, arginine vasopressin release, water intake, and hypertrophic responses. This action results in more efficient blockage of the cardiovascular effects of angiotensin II.

Hydrochlorothiazide inhibits sodium reabsorption in the distal tubules causing increased excretion of sodium and water as well as potassium and hydrogen ions.

Therapeutic Indication

Treatment of hypertension (not for initial therapy)

Clinical Studies

Wald et al performed a systematic meta-analysis evaluating combination therapy versus monotherapy in reducing blood pressure from 42 trials. Four antihypertensive drug classes were studied in the trials including thiazides, beta-blockers, angiotensin-converting enzyme inhibitors, calcium-channel blockers, and dual combinations of the above. The investigators found that blood pressure reduction from combining drugs from these four classes can be predicted on the basis of complementary mechanism of actions. The extra blood pressure reduction from using combination therapy is approximately five times greater than doubling the dose of one drug.

Calhoun et al prospectively investigated the efficacy and safety of triple antihypertensive therapy with amlodipine (Aml), valsartan (Val), and hydrochlorothiazide (HCTZ) for moderate to severe hypertension (SBP≥145 mmHg, DBP≥100 mmHg). Patients were randomized to one of four groups titrated to Aml-Val-HCTZ 10-320-25mg, Val-HCTZ 320-25mg, Aml-Val 10-320mg or Aml-HCTZ 10-25mg once daily. The study was completed at 8 weeks. The results demonstrated that patients on the triple antihypertensive regimen had a statistically significant reduction in mean sitting systolic BP and mean sitting diastolic BP from baseline to endpoint, and more patients on triple therapy achieved overall BP control compared to participants on dual therapy. Adverse events that occurred were classified as mild to moderate in intensity. Dizziness occurred more frequently with triple therapy, but less peripheral edema and HCTZ-induced hypokalemia resulted with this regimen.

Pharmacokinetics:

Bioavailability

Amlodipine – 64 – 90%

Valsartan – approximately 25%

Hydrochlorothiazide – 50 – 80%

Half-life

Amlodipine – 30 – 50 hours

Valsartan – about 6 hours

Hydrochlorothiazide – 5.8 – 18.9 hours

Distribution

Amlodipine – Vd: 21 L/kg, protein binding: approximately 93%

Valsartan – Vd: 17 L/kg, protein binding, serum albumin: 95%

Hydrochlorothiazide – 3.6 – 7.8 L/kg, protein binding: 68%

Metabolism

Amlodipine – extensive hepatic (90%)

Valsartan – minimal hepatic (20%)

Hydrochlorothiazide – not metabolized

Elimination

Amlodipine – renal (10% of parent compound, 60% of metabolites)

Valsartan – renal 13%, fecal 83%

Hydrochlorothiazide – renal 61%

Dosage and Administration

Oral tablet (amlodipine besylate-hydrochlorothiazide-valsartan) 5mg-12.5mg-160mg, 5mg-25mg-160mg, 10mg-12.5mg-160mg, 10mg-25mg-160mg, and 10mg-25mg-320mg

Take one tablet by mouth in the morning with or without food, dosage is individualized

Dose may be titrated after 2 weeks of therapy

Maximum recommended daily dose: amlodipine 10mg-hydrochlorothiazide 25mg-valsartan 320mg

Adverse Effects

Renal – increased BUN (10%) and/or serum creatinine (2%)

Cardiovascular – edema (7%), hypotension (1.7%)

Endocrine – hypo (7%)/hyperkalemia (4%)

Neurological – dizziness (8%), headache (5%)

Respiratory – cough (>0.2%), nasopharyngitis (2.1%)

Gastrointestinal – dyspepsia (2%), nausea (2%)

STUDENT SECTION

Special Populations

Pregnancy Category D – There is positive evidence of human fetal risk, but the benefits from use in pregnant women may be acceptable despite the risk (for a life-threatening situation)

Use during nursing is not recommended

Pediatric – safety and efficacy has not been established in pediatric patients

Use is not recommended in severe hepatic and renal impairment

Contraindications

Anuria

Hypersensitivity to sulfonamide-derived drugs

Drug Interactions

Dofetilide – Thiazide diuretics enhance the QT prolonging effect of dofetilide and may increase the serum concentration.

Digoxin – Thiazide diuretics may enhance the toxic effect of digitalis by increasing the risk of hypokalemia.

Any CYP3A4 inhibitor (ie. itraconazole, ketoconazole) may decrease the metabolism of CYP3A4 substrates (ie. amlodipine) increasing the serum concentration.

Patient Monitoring Parameters

Blood pressure – patient should monitor daily at home

Orthostasis – if patients become dizzy, rise slowly to prevent falls

Baseline and periodic electrolyte panels – Potassium levels are the most worrisome

Hepatic function tests – LFTs should be monitored in patients with pre-existing liver impairment

Renal function – monitor in all patients, discontinue if severe

Peripheral edema – report signs and symptoms to physician

Other agents used for same indication

ACE inhibitors (ie. lisinopril)

Beta-blockers (ie. metoprolol)

Non-dihydropyridine calcium-channel blockers (ie. verapamil)

Alpha-2 agonists (ie. clonidine)

Aldosterone antagonists (ie. spironolactone)

Alpha-1 blockers (ie. terazosin)

Any combination of the above classes that are currently available

Recommendation to formulary

Only about one-third of individuals treated for hypertension achieve blood pressure control, and several require more than 3 different medications for control.

Multiple antihypertensives have the potential to allow blood pressure goals to be realized more quickly than adding single drugs slowly which will be beneficial in preventing cardiovascular events.

Instead of titrating up to the maximum dose of an individual drug causing increased dose-dependent side effects, a patient can be on multiple medications with complementary mechanisms of action at a lower dose for blood pressure control and less side effects.

Use of Exforge HCT® is recommended in patients who require these three classes of antihypertensives for blood pressure control and have been controlled for some time. This medication should not be used as initial hypertension treatment for naïve patients.

This antihypertensive combination has the potential to cancel out the usual hypokalemia and peripheral edema associated with hydrochlorothiazide and amlodipine, respectively.

Exforge HCT® will help with adherence in patients who are taking multiple medications since it contains three antihypertensives in one tablet.

References

Calhoun, DA, Lacourciere, Y, Chiang, YT, Glazer, RD. Triple Antihypertensive Therapy With Amlodipine, Valsartan, and Hydrochlorothiazide: A Randomized Clinical Trial. *Hypertension*. 2009;54:32-39.

Lexi-Comp Online, Lexi-Drugs Online, Hudson, Ohio: Lexi-Comp, Inc.; 2009; July 13, 2009.

Micromedex® Healthcare Series. n.d. Thomson Reuters (Healthcare) Inc., Greenwood Village, CO. 13 July 2009 <http://www.thomsonhc.com>.

Wald, DS, Law, M, Morris, JK, Bestwick, JP, Wald, NJ. Combination Therapy Versus Monotherapy in Reducing Blood Pressure: Meta-analysis on 11,000 Participants from 42 Trials. *Am J Med*. 2009;122:290-300

GCSHP has a new website

that is linked to TSHP website.

Log on to the TSHP website at www.tshp.org and under the Links tab,

click on GCSHP!!!

RESIDENT SECTION

Maggie Dinh, PharmD
Pharmacy Practice Resident

Michael E. DeBakey VA Medical Center

Coffee's Effects on Fasting Glucose and Diabetes Risk

As of 2007, 23.6 million people are diagnosed with diabetes and another 57 million with pre-diabetes. The direct and indirect economic cost of diabetes is approximately $174 billion. More than half of the American population consumes coffee, a statistic that has led to numerous studies looking at the association between coffee consumption and risk of diabetes mellitus. Many studies have concluded that subjects who regularly consume more coffee have a lower risk of developing type 2 diabetes.

In a randomized, controlled trial in healthy coffee consumers, van Dam and colleagues looked at the effects of coffee on fasting blood glucose and insulin concentrations. They studied 26 volunteers during a 4-week period of coffee consumption followed by 4 weeks of abstinence from coffee in a randomized order. What they found was that after 2 weeks, coffee consumers had higher fasting glucose levels. After 4 weeks, however, this difference was no longer observed. Fasting insulin concentrations at 4 weeks were higher in the group who consumed coffee. These findings indicate that short-term coffee consumption can lead to impaired fasting glucose but that tolerance probably develops over time and that coffee consumption does not significantly increase fasting blood glucose levels in the long run. The increased fasting insulin levels observed in coffee consumers however, may be due to decreased insulin sensitivity. Several proposed mechanisms for this finding are that the increased insulin secretion may be due to higher insulin secretion, reduced hepatic insulin clearance, or psychological stress due to the rapid increase in coffee consumption (equivalent to 13 cups of coffee).

Another study conducted by van Dam and colleagues looked at the relationship between habitual coffee consumption and impaired fasting glucose (IFG), impaired glucose tolerance (IGT) and type 2 diabetes. At baseline, coffee consumers had lower fasting insulin concentrations and 2-hour post-load glucose concentrations, but there was no difference in fasting glucose concentrations. A 5-cup average coffee consumer was associated with having an 8.8% reduction in post-load glucose concentration. After a 6.4-year follow up, coffee consumers were associated with a lower incidence of IGT ($p=0.001$) and showed a trend for lower incidence of type 2 diabetes ($p=0.09$). Coffee consumption did not seem to affect fasting glucose concentrations. Results of this study suggest that the effect of coffee consumption on post-load glucose rather than on fasting glucose may explain its benefit in reducing diabetes incidence.

Lane and colleagues looked at the effect of caffeine on glucose levels and postprandial responses in diabetics in a double-blind, crossover trial. Ten subjects received both 500 mg of caffeine or placebo at breakfast and lunch on two consecutive days. Ambulatory glucose concentration was measured using a continuous glucose monitoring system. Results showed that caffeine consumption increased average daytime glucose concentrations, especially 3-hours post-meal when compared to placebo. Implications of this study were that caffeine had negative effects on glucose concentrations throughout the day, especially in postprandial concentrations. A major difference between this study and other studies is that investigators used caffeine pills instead of coffee, which may contain other ingredients that effect glucose metabolism.

Many studies have shown a similar association between both caffeinated and decaffeinated coffee and diabetes risk. This finding led to the suspicion that components other than caffeine contribute to this benefit. Chlorogenic acid and trigonelline are two components of coffee that have been shown to reduce blood glucose concentrations in rats. van Dijk and colleagues looked at fifteen healthy subjects who were regular coffee consumers in a randomized, cross-over study. Subjects were assigned to one of four groups: decaffeinated coffee, chlorogenic acid, trigonelline and placebo and each consumed one of the four study supplements every 6 days. Two-hour oral glucose tolerance tests were performed 30 minutes following consumption of the study supplement. Compared to placebo, blood glucose levels tended to be lower after ingestion of chlorogenic acid or trigonelline. However, this difference was only seen at 15 minutes after ingestion of the study supplement. There was not a significant difference between the groups when comparing area under the curve for both glucose and insulin concentrations for up to 2 hours after the OGTT. The results of this study suggest that several components of coffee can possibly be responsible for early insulin and glucose responses that may benefit in reducing diabetes risk.

Although there have been numerous trials that have studied coffee consumption and its effect on diabetes, some studies have shown conflicting results. Larger, randomized, longer-term studies will need to be conducted in the future in order to mechanistically understand the effect of coffee consumption on fasting and post-load glucose levels, insulin sensitivity, and incidence of type 2 diabetes.

For a complete list of reference or more information, please contact Maggie Dinh at maggie.dinh@va.gov.

Has your contact information changed?

Please send all changes to

Katy Hanzelka at

khanzelka@mdanderson.org

TSHP MENTOR PROGRAM

The Texas Society of Health-System Pharmacists is introducing a new service available to interested pharmacy students and pharmacists, The TSHP Mentor Program! The program will provide student members the opportunity for networking, professional development, and career guidance to ensure the advancement of the pharmacy profession.

A mentor is a role model who helps and guides another individual's development through teaching, coaching, and counseling. One of the most valuable assets your career can have is a good mentor. Pharmacists will be matched with students to provide a greater understanding of a variety of career paths within the pharmacy profession.

TSHP hopes this fostered relationship between the pharmacist and student will allow students to grow personally and professionally within the organization and profession.

Interested individuals can complete an online application to become a mentor and/or a mentee beginning Oct 1st, 2009. Please encourage your TSHP colleagues to take advantage of this opportunity to contribute to the professional growth of future pharmacists!

RESIDENT SECTION

Jodie Gee, PharmD
Pharmacy Practice Resident

Harris County Hospital District

Ramadan and Diabetes

Ramadan is the Holy month of Islam when healthy Muslims fast from sunrise to sundown. They are to abstain from eating, drinking, taking medications, and smoking. The religious observance lasts for 29 to 30 days, depending on the lunar calendar. This year Ramadan started on 8/21/09 and ended on 9/19/09. Only two meals are consumed each day during this period, one before sunrise (Suhur) and the other after sunset (Iftar).

Many pharmacists are faced with a dilemma when a patient with diabetes wishes to observe Ramadan. Fasting can significantly alter glycemic control in diabetes where both hypoglycemia and hyperglycemia can occur. In order to address this issue, the American Diabetes Association published a set of recommendations for patients with diabetes who wish to observe Ramadan. The recommendations are based upon expert consensus from physicians in clinical practice, due to limited information from clinical trials.

The first step in addressing Ramadan and diabetes is to stratify the patient in a risk category to determine if fasting is feasible. As seen in Table 1, low risk patients have the least risk of developing hyperglycemic and/or hypoglycemic complications from fasting. On the other hand, patients that fall into the very high and high risk categories should take caution when considering fasting.

Table 1

Very High Risk	High Risk	Moderate Risk	Low Risk
Severe hypoglycemia w/in last 3 months	Moderately poor glycemic control*	Well-controlled with short acting insulin and/or secretagogues (repaglinide and nateglinide	Well-controlled – diet alone, metformin, or thiazolidinedione
Ketoacidosis w/in last 3 months	Elderly		
Hx recurrent hypoglycemia	Living alone		
Poor glycemic control	Living alone w/ tx sulfonylurea or insulin		
Type 1 Diabetes	Renal insufficiency		
Pregnancy			

***Avg blood glucose 150-300 mg/dL, AIC 7.5-9.0%**

Most patients with diabetes are either on oral medication or insulin. Appropriate adjustments to their medication regimens should be made accordingly to prevent acute glycemic complications. Adjustments to oral medications are recommended as follows:

Metformin – 1/3 total daily dose at sunrise meal, 2/3 at sunset meal (ie. Pre-Ramadan dose = 500 mg TID -> Ramadan dose = 500 mg q AM, 1000 mg q PM)

Thiazolidinediones – Usual daily dose

Meglitinides – Twice daily with each meal

Sulfonylureas –

- Once daily dosing --> Take at sunset meal
- Twice daily dosing -->½ AM dose at predawn, Full dose at sunset

With regards to patients on insulin, the following regimen is an example of how insulin can be adjusted:

Insulin NPH (ie. Pre-Ramadan dose = 30 units AM/20 units PM)

Step 1: Cut usual PM dose in half

Step 2: Take this PM dose at predawn

Step 3: Take usual AM dose at sunset

Ramadan dose = 10 units AM/30 units PM

Rapid/Short acting insulin BID at each meal

Nutritional recommendations when breaking the fast include consuming foods which have a low glycemic index such as wheat, brown rice, barley, oats, fruits, vegetables and yogurt. It is recommended that patients avoid foods that have a high glycemic index such pastries and other desserts. It is best to eat the predawn meal as late as possible and to eat the sunset meal immediately. ADA also recommends that patients break the fast if hypoglycemia occurs.

As healthcare professionals, it is our role to keep our patients' best interests in mind with regards to their health. However, it is important that we improve our cultural awareness, and provide the necessary tools for them to make an informed decision. With these recommendations in hand, this will allow us to educate patients so that they are aware of the risks and consequences involved with fasting.

References:

Salti I, Benard E, Detournay B, Bianchi-Biscay M, Le Brigand C, Voinet C, et al. A population-based study of diabetes and its characteristics during the fasting month of Ramadan in 13 countries. *Diabetes Care* 2004; 27(10): 2306-11.

Al-Arouj M, Bouguerra R, Buse J, Hafez S, Hassanein M, Ibrahim MA, et al. Recommendations for management of diabetes during Ramadan. *Diabetes Care* 2005; 28(9): 2305-11.

Sheikh A and Wallia S. Ramadan fasting and diabetes. *BMJ* 2007; 335: 613-14.

Hassanein M, Bravis V, Hui E, Devendra D. Ramadan-focused education and awareness in type 2 diabetes. *Diabetologia* 2009; 52: 367-8.

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