Caring for Muslim Patients Who Fast During Ramadan

Commentary by TASNIM KHALIFE, MD; JESSIE M. PETTIT, MD; and BARRY D. WEISS, MD, University of Arizona, Tucson, Arizona

Case scenarios are written to express typical situations that family physicians may encounter; authors remain anonymous. Send scenarios to afpjournal@aafp.org. Materials are edited to retain confidentiality.

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Case Scenario
A 68-year-old Muslim man who was recently diagnosed with type 2 diabetes mellitus presented for a routine health visit. His initial A1C level was 8.2%, which decreased to 6.7% after dietary changes, exercise, and treatment with metformin (Glucophage). He stated that he wanted to fast during Ramadan and requested advice on how to manage his diabetes while fasting. Because our clinic serves a large Muslim community, we have been seeking more general guidelines for advising vulnerable individuals and patients with medical conditions on a safe approach to fasting. What recommendations should we make to patients to maintain health while fasting during Ramadan?

Commentary
Ramadan is a holy month during which Muslims fast from eating, drinking, sexual intercourse, smoking, and all vices from dawn until sunset.1,2 The fast of Ramadan is one of the five pillars of Islam. It is an obligation for all healthy adult Muslims, with a focus on spiritual and physical well-being to strengthen one’s relationship with God. Because it is based on a lunar calendar, the dates of Ramadan vary each year. In 2015, Ramadan is expected to occur from June 18 to July 17.

VULNERABLE GROUPS WHO OBSERVE FASTING

The Quran exempts the sick from fasting.1,2 According to Islamic scholars, persons exempt from fasting include individuals with illnesses that might be exacerbated by fasting (e.g., diabetes), women who are pregnant or breastfeeding, prepubertal children and adolescents, and those on medication regimens that would be affected by fasting. Other groups exempted from fasting include those with disabling mental illness or developmental disabilities, menstruating women, women with postpartum bleeding, older persons, and travelers.

Many Muslims who are exempt from fasting nonetheless choose to fast. Clinicians should be able to provide advice on how such patients should safely approach the fast.

DIABETES

Worldwide, an estimated 40 to 50 million patients with diabetes fast during Ramadan, including nearly one-half of those with type 1 diabetes and most of those with type 2 diabetes.1,3 Patients with diabetes who choose to fast require close blood glucose monitoring because there is an estimated 7.5-fold increase in severe hypoglycemia for those with type 2 diabetes.3 Other risks of fasting with diabetes, particularly when medications are withheld, include hyperglycemia, diabetic ketoacidosis, hyperosmolar hyperglycemic state, dehydration, and deep vein thrombosis.1,4 Clinicians should explain warning signs for these conditions to patients and instruct them to break the fast and seek medical attention if symptoms occur.

Specific recommendations in the literature provide risk stratification criteria to determine whether fasting is safe for patients with diabetes.1,4 Fasting is unsafe for patients with type 1 diabetes, but is generally considered safe for patients with well-controlled type 2 diabetes treated with oral agents. To avoid hypoglycemia, certain medications require dose adjustment. Metformin should be dosed twice daily with one-third of the total daily dose taken at the predawn meal and two-thirds at the larger evening meal.1,4 For sulfonylureas, dosed twice daily, halving the predawn dose...
should be considered.\textsuperscript{1,4} Any oral agents
dosed once daily should be taken at the eve-
ning meal. Thiazolidinediones, dipeptidyl-
peptidase-4 inhibitors, and short-acting
oral insulin secretagogues do not require
adjustment because of the low risk of hypo-
glycemia. Patients with type 2 diabetes who
are taking long-acting insulin and choose
to fast should decrease each dose by 20%.'

In this case scenario, the patient has well-
controlled diabetes on metformin mono-
therapy. He is in a low-risk category and can
safely fast with careful blood glucose moni-
toring and dosing adjustment as described
earlier.

**PREGNANCY AND BREASTFEEDING**

Islamic law exempts women who are preg-
nant or breastfeeding from fasting, and phy-
sicians should recommend against fasting
for these patients. Nonetheless, many preg-
nant and breastfeeding women choose to
fast during Ramadan.\textsuperscript{5,6} Women who do so
should be advised to hydrate and consume
nutritious foods during the predawn and
evening meals. Clinicians should also give
precautions against excessive daytime activ-
ity, and explain the warning signs that war-
rant breaking the fast, such as decreased fetal
movement, extreme fatigue or dizziness, or
nausea with vomiting.

**CHILDREN AND ADOLESCENTS**

The requirement to fast begins with puberty,
so children are exempt from fasting. How-
ever, children often fast with their fami-
lies for a portion of the day. Postpubertal
adolescents generally fast, and those who are
unaccustomed to fasting and participate in
athletics or spend time outdoors in warm
climates require special attention to avoid
dehydration. Clinicians can help prevent
dehydration by excuses students from phys-
ical education classes and advising student
athletes to train in the early evening hours,
just before or after breaking their fast.

**MEDICATIONS**

Consuming oral medications during the fast-
ing hours invalidates the fast, and patients
often skip midday doses. Therefore, long-
acting forms of medications or twice-
daily dosing regimens are options during
Ramadan.\textsuperscript{2}

Intramuscular and subcutaneous injec-
tions, eye and ear drops, and routine blood
draws do not invalidate the fast. Donating
blood is prohibited while fasting. Inhaled
nebulizers and nasal sprays are generally
allowed as long as the solution does not
drain to the back of the throat.\textsuperscript{2} When in
doubt about these or other issues, patients
should be advised to consult their local reli-
gious leader. Table 1 lists general nutrition
recommendations that clinicians can give to
patients who are fasting.

Address correspondence to Tasnim Khalife, MD, at
tasnim.khalife@gmail.com. Reprints are not available
from the authors.

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**Table 1. General Nutrition Advice for Patients Who Fast**

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| Avoid caffeinated drinks, fatty foods, heavily processed foods, and high-
glycemic carbohydrates (e.g., refined flour or sugar, white bread, white rice). |
| Use monounsaturated oils, such as olive or canola oil, in cooking.      |
| Eat a well-balanced predawn and evening meal during each day of the
Ramadan fast. The predawn meal is called suhoor and the evening meal is called iftar. |
| Emphasize complex carbohydrates that release energy more slowly while
fasting (e.g., barley, wheat, oats, millet, semolina, beans, lentils).    |
| Hydrate aggressively during nonfasting hours, especially in warmer climates. |
| Increase fiber-rich foods for slow digestion (e.g., bran, whole-grain
   cereals, whole-grain bread, grains, fruits).                           |