EXPERT OPINION: Afshin Gangi, MD, PhD
Award-winning abstract concludes cryoablation offers better visualization of ice ball and better protection of surrounding organs compared with RF ablation

Galil Medical recently talked with Afshin Gangi, MD, PhD, about the award-winning abstract* he presented at the Cardiovascular and Interventional Radiological Society of Europe (CIRSE) congress Oct. 2-6, 2010, in Valencia, Spain. Dr Gangi used a Galil Medical Cryoablation System for his clinical studies.

GM: What are the benefits of percutaneous renal cryoablation (cryo) vs radiofrequency ablation (RFA)?
AG: First, a huge advantage of cryoablation is that you can see the ablation zone. You can see the ice ball so precisely on CT and especially on MR. This makes it very easy. You’re not driving in the fog – you’re driving on a very clear road on a sunny day.

With RFA, you do the best you can, but you have to wait one month to find out if it was enough. At the end of a cryo procedure, you know your operation is done, because you could see your ice balls, specifically on CT and MR. Visualization of the ice ball is a key point.

Second, you can treat more kinds of tumors with cryo. RFA is useful for treating small, easy tumors (2–3 cm). But with cryo, we can treat most renal tumors under 5 cm, in any location in the kidney: superior, inferior, central or peripheral.

Amit S. Sudan, MD
Interventional Radiologist
Colorado Permanente Medical Group, Denver, CO

U.S. PERSPECTIVES: Amit S. Sudan, MD
Cryotherapy vs RF ablation

Galil Medical also talked with two U.S.-based interventional radiologists about their experience with cryotherapy in their practices.

Amit S. Sudan, MD
Interventional Radiologist
Colorado Permanente Medical Group, Denver, CO

GM: What is one of the advantages of cryoablation over RF ablation?
AS: The Galil cryotherapy is simpler to set-up and has a greater ability to customize the ablation zone when compared to RFA or other cryotherapy systems. No ground pads are required, unlike RFA, and you don’t need to worry about interactions with the patient’s cardiac pacemaker or AICD.

GM: What would you say to other IRs considering cryoablation?
AS: The latest generation [17 G] cryoablation needle is fantastic. That’s been a limiting factor for quite some time -- previous probes were bulkier and more difficult to place properly. The Galil probes are much easier to place -- just as easy as RF probes. I think it will convince many physicians to give cryo a try.

(article continues on the next page)
GM: What patients are good candidates for percutaneous cryoablation?

GG: Appropriate candidates for renal Cryoablation include:

1. Patients with surgically resectable disease, but high co-morbidities precluding surgery.
2. Tumors less than or equal to 5 cm in size. (Can treat larger tumors)
3. Patients with multiple renal masses (Von Whipple Lindau)
4. Patients with solitary kidneys
5. Patients with renal insufficiency, nephron sparing procedure
6. Patients who do not want surgery

Then the last group is patients who don’t want surgery. They’ve heard about this, they know that the success rates are very good with a lot less recovery, with a lot less pain, and something we can repeat easily.

GM: What are some downsides to cryo, and how do you compensate for them?

GG: First, there are some reports of higher rates of bleeding vs. thermal ablation techniques utilizing heat. Mayo reports a 4% vs. 2% difference in hemorrhage with cryoablation vs. RFA. From my experience, there may be 2 reasons why this occurred. One, physicians tend to be impatient with needle removal prior to a complete thaw. This can produce a tumor fracture and bleeding. Allowing an adequate thaw decreases the risk of bleeding. Second, the Cryoablation probes utilized in the quoted study were much larger than the Galil probes [11g vs. 17 g].

The second problem is the number of needles required to achieve a complete ablation zone. Cryoablation can be more technically challenging due to the potential need to place multiple needles in the tumor while simultaneously keeping the needles 2 cm away from each other at the skin surface to prevent dermal injury. With many RFA systems, one needle/probe is all that is required.

Overall, there are tradeoffs. While needle placement may take some extra time upfront, we gain the real time visualization of the zone of necrosis and should be able to modify treatment based on the images. This should allow higher complete ablations or sooner retreatment.