



American Healthcare Professionals and Friends for Medicine in Israel

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While not Cupid, Dr. Rabea Asleh *is* in the business of helping people with broken hearts.

The 37-year-old Arrabeh native is a 2016-2017 APF Fellow in Advanced Heart Failure and Transplant Cardiology at Mayo Clinic in Rochester, Minn. (Arrabeh is in the low Galilee, on the northern side of Israel.)

“It’s very rewarding to be able to prolong lives with quality using many alternatives now: external devices such as ECMO; implantable devices such as artificial hearts and support mechanisms like LVAD’s; heart transplants and medications. Some of this technology acts as a ‘bridge to transplant’ (keeping people alive and healthy enough while awaiting transplant), while others are the primary life-saving treatments involved.

“These are the newest options available to those with heart failure.”

ECMO -- extracorporeal membrane oxygenation -- a temporary mechanical support system used to aid heart and lung function in patients with severe respiratory or cardiac failure, developed as an offshoot of cardiopulmonary bypass.

LVAD -- left ventricular assist device -- The left ventricle is the large, muscular chamber of the heart that pumps blood out to the body. An LVAD is a battery-operated, mechanical pump-type device that's surgically implanted. It helps maintain the pumping ability of a heart that can't effectively work on its own.

Asleh says this is a new field, a subspecialty that has grown up due to the rapid expansion both of the population of patients with heart failure and of diagnostic and therapeutic options for their management.

He notes the numbers that show that devices and transplants can “buy” significant quality time for patients. “Whereas the one-year survival rate with optimal medical therapy only is about 25 percent in patients with advanced heart failure and the two-year survival is less than 10 percent; with heart transplantation the one-year survival rate is about 90 percent and 85 percent at two years.

“With LVAD as destination therapy the one-year survival rate is around 75 percent and the two-year survival rate is around 60 percent.

“Thus these therapies, compared with medical therapy, have markedly improved patient survival and quality of life based on recent studies. And results continue to improve as the technology improves and we have more experience with these devices.

“The other part of my work is treating patients after transplants, including immunosuppressant therapy, and for any complications that might arise. They are more susceptible to infection because of their suppressed immune systems.

“Rejection of the graft must also be treated. And there are patients who have had multiple organ transplants at the same time, such as heart and liver transplants and heart and kidney transplants. It’s a multi-disciplinary field, with colleagues including surgeons, nephrologists and hepatologists.”

At Mayo, about 70 percent of Asleh’s time is devoted to clinical work and about 30 percent is research.

“Cardiology is still a newer area, a great one for research, with a lot of very interesting things to study. Oncology and cardiology are probably the areas with the most funding and research projects in medicine. In cardiology things are moving very fast.”

Asleh is studying three areas in particular at Mayo:

- The impact of different diseases, including diabetes, on LVAD and heart transplants patients.
- Predictors for the development of coronary artery disease after transplantation.
- Two different immunosuppressants for use after transplant.

The Asleh family, five including Dad, hails from Haifa. They are Mom Ayat, 32, a biotechnology and food engineering specialist; sons Yamin, 6 and Naseem, 15 months and daughter Aline, 3. They will stay in Rochester for a total of two years, because Mayo recently extended the length of the fellowship.

Asleh knew he wanted to be a scientist even before high school. "I always enjoyed my science courses and knew if I were to become a physician I wanted to know more in depth about medication and devices." By the time he was in high school, he knew medicine was for him.

"My uncles on both sides of the family are doctors and their work impacted me. They were models for me – they were respected by people and helped people. This inspired me to want to help people and improve health care." (Along with this last goal, Asleh later completed a Master of Health Administration at the University of Haifa.)

"I could have gone into computer science, but no. I realized that medicine was more compatible with my skills and the things I love to do and want to understand more. For example, I love the interaction with people and to try to improve their quality of life and to help them be healthy. I think that, in particular, my interpersonal skills made medical school a good fit."

Asleh attended medical school at Haifa's Israel Institute of Technology (Technion) in a competitive MD/PhD program. His doctorate is in molecular and cell biology. He studied cardiovascular disease and diabetes, beginning his PhD in his third year in medical school.

Since medical school Asleh also has been a researcher in Dr. Andrew P. Levy's laboratory of

vascular medicine at Technion. He considers Levy his mentor.

During his sixth year of medical school Asleh spent two months at Johns Hopkins University School of Medicine studying internal medicine and cardiology.

Asleh completed his internship and residencies in internal medicine and cardiology at Rambam Health Care Campus in Haifa.

During his internship and residency in internal medicine Asleh decided on cardiology. "There are so many opportunities for research in this specialty and the chance to make tremendous everyday impact on lives is very real."

Back in Israel Asleh was a lecturer in cardiology and in internal medicine at Technion which is affiliated with Rambam. He taught medical students in class and on hospital wards. "I love teaching. You get to build a good educational system to help students be good physicians in the future. I also love the interaction with the students.

"Teaching helps keep you updated in medicine and in science. It is very helpful to you as a physician too. You learn a lot, it's a healthy system in which you, too, keep refreshing your knowledge."

When he returns to Israel he will continue to teach.

Was it necessary to leave Israel for the learning experience afforded at Mayo?

Yes. Such an institute doesn't exist in Israel. "You can't compare a center with more than 20 years of experience in heart transplantation and assistive devices to an entire country with comparatively little experience in the field. At Rambam, for example, we don't have heart transplantation and are not yet working with assistive devices.

"You can't do this kind of fellowship in Israel, to be exposed to these facilities, these people, these patients – the research, the education, everything." Diversity and volume of patients far exceeds what Asleh would be exposed to in Israel. "And you need the time – one to two years."

Why Mayo?

"You can't dream of a better place than Mayo Clinic. It's one of the best in the United States and one of the best in the world. It's a great place to do clinical work and research. There's a lot of data base usage and a lot of support while getting these skills. I can't think of a better place to do a fellowship in cardiology. After all, Mayo has just been ranked #1 in the U.S.

"The people, the research and the equipment are all "top-of-the-line."

What's a fellowship day like?

"It's very intense and busy."

There are three fellows. They rotate through these critical cardiac services: LVAD, heart transplant, catheterization laboratory, heart failure, mechanical circulation and clinics.

"We start at 6:30 a.m. and work until about 4 p.m. to 5 p.m. but often keep working until 8 p.m. doing research. But when you're on the LVAD and transplant services, you're on call 24/7. And there is only one fellow per service, so you are the lone fellow."

Asleh says weekly hours amount to about 40 for clinical and 25 for research, not counting on-call. "We also have lots of conferences and other educational events to attend and material to present."

How many cases a day?

A fellow may see as many as 20 patients a day, depending on the service.

"We may see 20 clinic patients in a day, or see far fewer transplant or assistive device patients. We see a lot of patients in the ICU, after heart attacks, needing advanced support like ECMO."

Asleh has published about 25 articles and has more in the pipeline, hoping to publish work from his time in Minnesota. He's presented scientific material abroad many times and will travel in the U.S. presenting more research.

The family has traveled around Minnesota and is adjusting to the winter. "The snow – OH WOW! It's a good thing everything is connected indoors. We have also skied some.

"There's a good library and a museum for kids. And lots of other fellows with young families, so that's great."

What would Asleh like to do with his Mayo experience when he returns to Israel?

"At Rambam we have protected research time, I'd like to continue with my research and someday have my own lab.

"And I'd like to start an Advanced Heart Failure and Transplant Cardiology program at Rambam."

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