

POINT-COUNTERPOINT:

Controversies in Device Implantation and Management

Is Ejection Fraction Alone a Sufficient Indication for an Implantable Cardioverter Device?

YES. “Ejection fraction (EF) alone is sufficient indication for ICD placement,” said Helmut U. Klein, MD, Chief, Division of Cardiology, University Hospital, Magdeburg, Germany.

“In most studies, risk parameters were studied in patients with lowered EFs,” said Dr. Klein. “This means that most of what we know about when and why to implant ICDs is in patients with low EFs—not the general population.”

Dr. Klein contended that the weight of evidence along with guidelines from most expert groups tell us that earlier intervention for preventing SCD is warranted in selected patients. “And do we really have more or better parameters for selecting these patients than LVEF?” he asked.

In Dr. Klein’s view, none of the currently known and tested risk factors or criteria aside from EF have sufficient sensitivity or predictive value to be used alone as ICD indications.

“EF is also easy to assess, quick, and cost-effective,” Dr. Klein noted. “As long as there’s no better risk criteria for ICDs, we must go with EF.”

NO. “Dr. Klein’s argument is precisely why we should not rely on EF alone as a sole indicator for ICD placement,” said Andrea Russo, MD, Director, Electrophysiology Laboratory, Penn Presbyterian Medical Center. “The very fact that key studies don’t look at EF alone means we should not use EF measurement in isolation in making clinical decisions,” she said.

Dr. Russo noted that in a succession of key clinical trials (MADIT, MADIT-II, MUSTT, SCD-HEFT), EF <30-40% was a principal criteria, “but never the only criteria. And none of these trials were designed to evaluate EF alone. Therefore, we do not have data that truly evaluates EF as a single criteria for ICD.”

Dr. Russo also observed that using EF as the only risk stratification tool might put patients at risk unnecessarily, noting costs and risks in patients who may be poor candidates for implantation.

In citing the facts that SCD and mortality are impacted by multiple factors—not solely by EF—and that some patients with normal EFs go on to SCD, Dr. Russo reiterated her contention that using EF alone as a guide to ICD placement is inadequate.

“EF alone cannot identify all patients at risk all the time,” she said. “It is not universal and it is not a panacea in making the ICD decision.”

Comment: Conversely, not all patients with low EF are at high risk for SCD. There clearly is a need for more specific tools for risk stratification.

