

When one defibrillation shock isn't enough

Clinical evidence for increasing the biphasic dosage

Maximizing conversion rates

Clinical evidence from two out-of-hospital ventricular fibrillation (VF) studies^{1,2} confirm the effectiveness of current AHA recommendations for first shock dosage. But for patients who need additional shocks, these studies show that repeating the same first shock dosage is inferior to a strategy of increasing to a higher dosage.

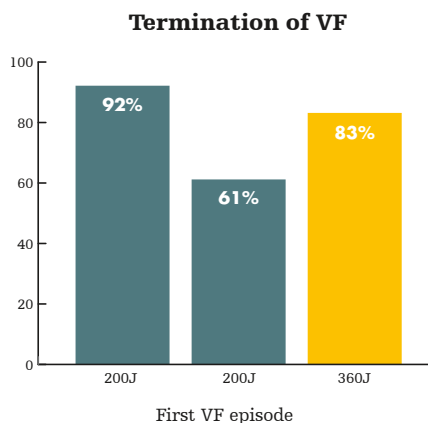
An escalating protocol is consistent with the 2010/2015 AHA Guidelines recommendation for subsequent dosage:

"...based on available evidence, we recommend that second and subsequent energy levels should be at least equivalent and higher energy levels may be considered, if available (Class IIb, LOE B)."³

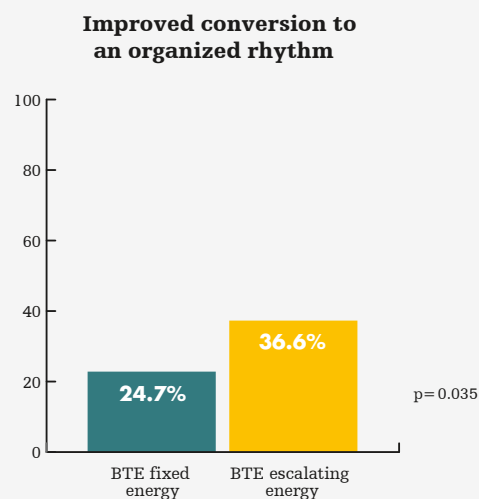
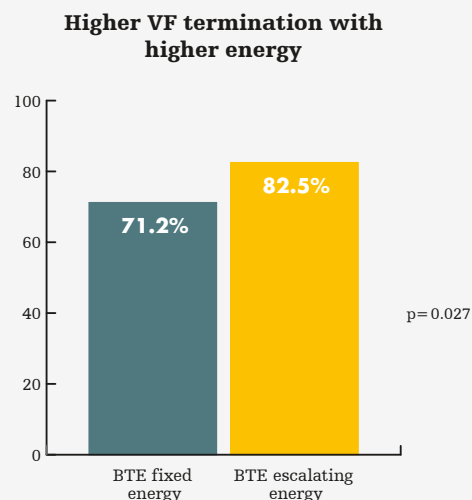
Furthermore, this clinical evidence from these two studies show a benefit from escalating dosage.

Benefits of broad dosage capability

Clinical studies have shown a majority of cardiac arrest victims with an initial rhythm of VF will experience repeated episodes of VF over the course of a resuscitation attempt.^{1,4-8} For any given VF episode, whether the initial shock fails or VF reoccurs, defibrillation becomes more difficult.¹ For these patients in both hospital and out-of-hospital settings, increasing the dosage of subsequent shocks above the dose used for the first shock has proven to be a better strategy for terminating VF than simply repeating a failed dosage.^{1,2,9} LIFEPAK® defibrillator/monitors provide the broadest dosage capability, up to 360J.



- High rate of 1st shock success with LIFEPAK defibrillator/monitor at (92%)¹
- Diminishing return from repeating the dosage after a first shock failed (92% first shock vs. 61% second shock success, p=0.001)
- All patients were eventually defibrillated with 360J (statistical trend due to sample size)



- Triple blinded, randomized controlled clinical trial in 221 patients comparing two biphasic dosage protocols: fixed lower energy 150J vs. escalating higher energy 200J-300J-360J.²
- Among patients requiring more than one shock, the escalating higher energy regimen provided significantly higher rates of VF termination (71.2% vs. 82.5%) and conversion to an organized rhythm (24.7% vs. 36.6%) compared to a fixed low energy regimen.

References

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