

Therapeutic Hypothermia: A Cool Treatment Of Cardiopulmonary Arrest

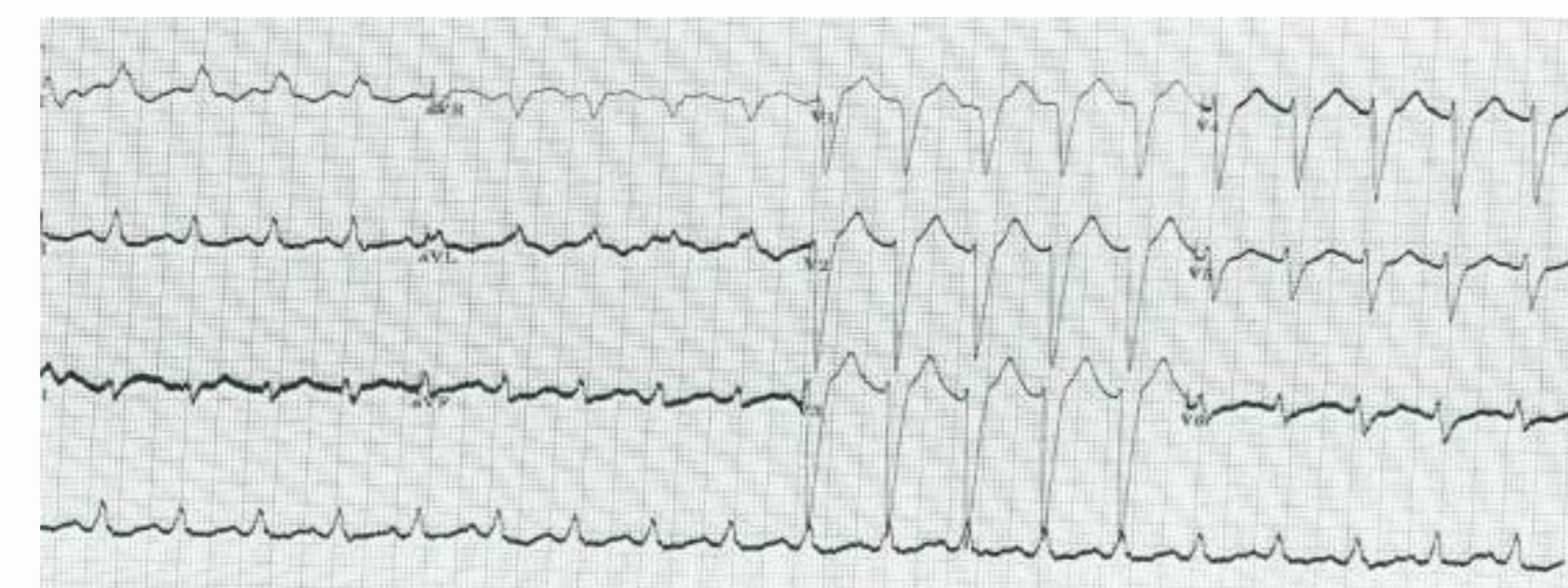
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Introduction

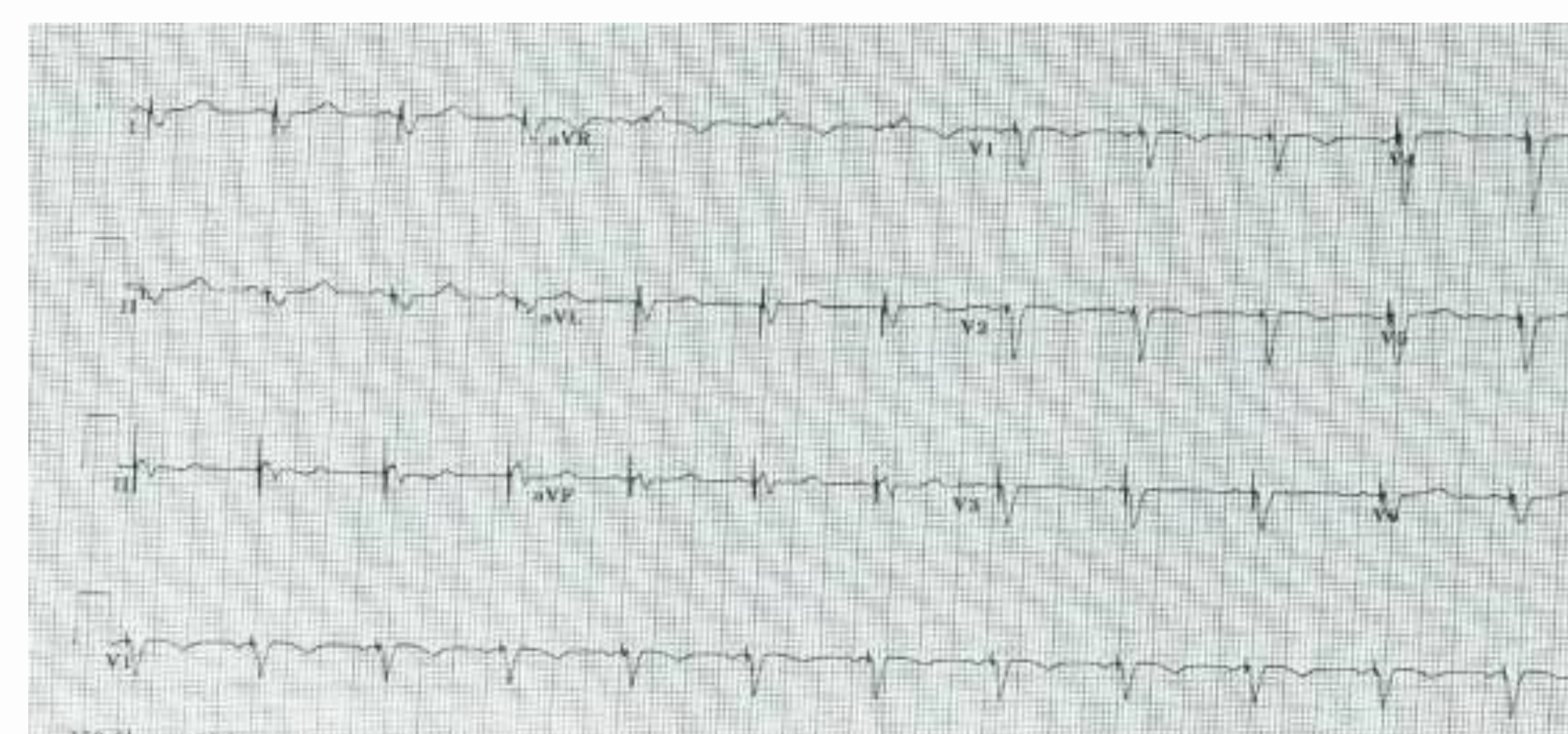
- Therapeutic hypothermia was pioneered by 2 landmark studies (Safar et.al and Bernard et.al) in 2002.
- Brain temperature during the first 24 hours after resuscitation from cardiac arrest has a significant effect on survival and neurological recovery.
- Cooling to 32-34°C for 24 hours was associated with a decreased mortality.



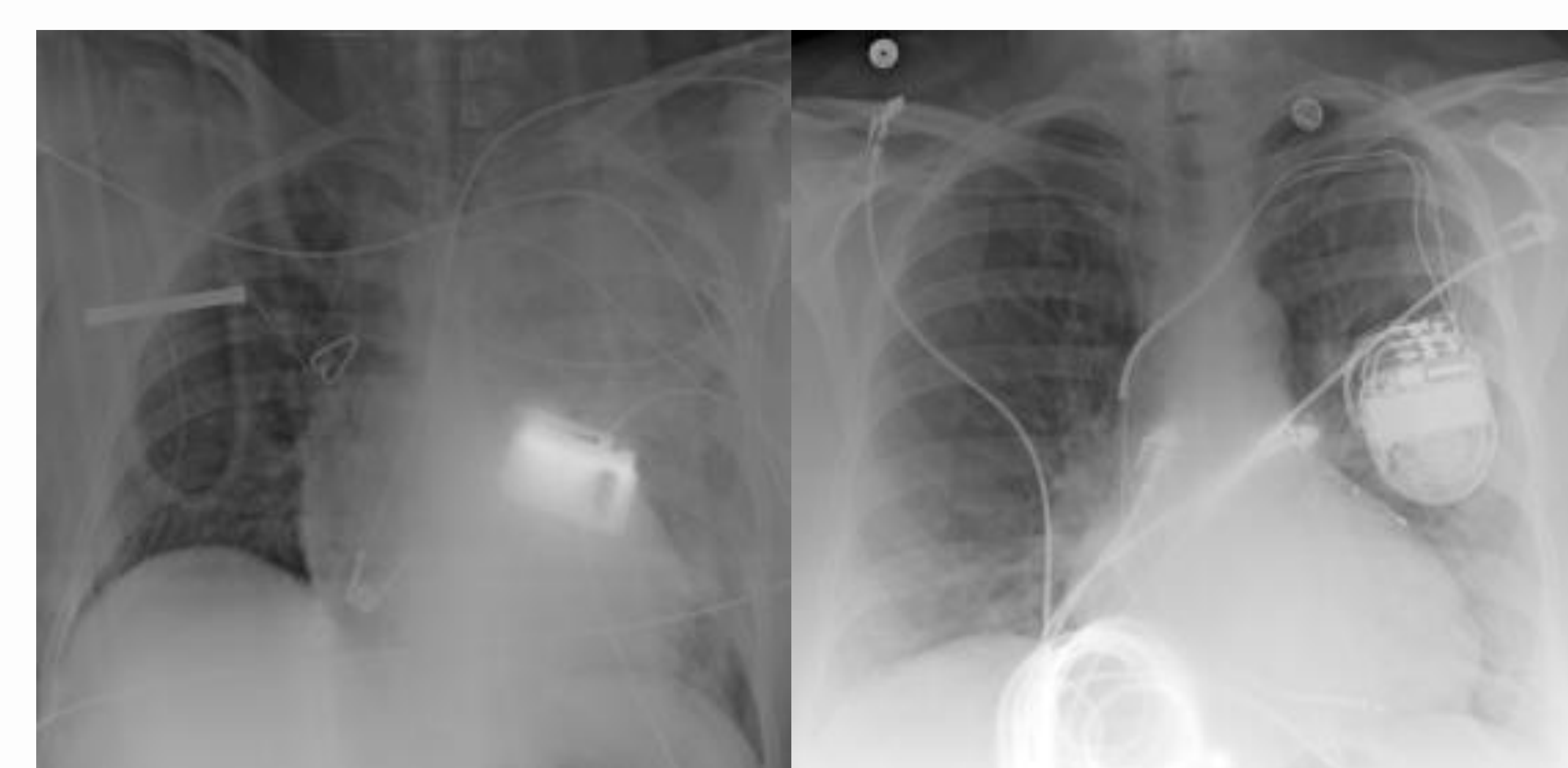
Ventricular fibrillation



Prolonged QT



After BiVentricular device



CXR before and after



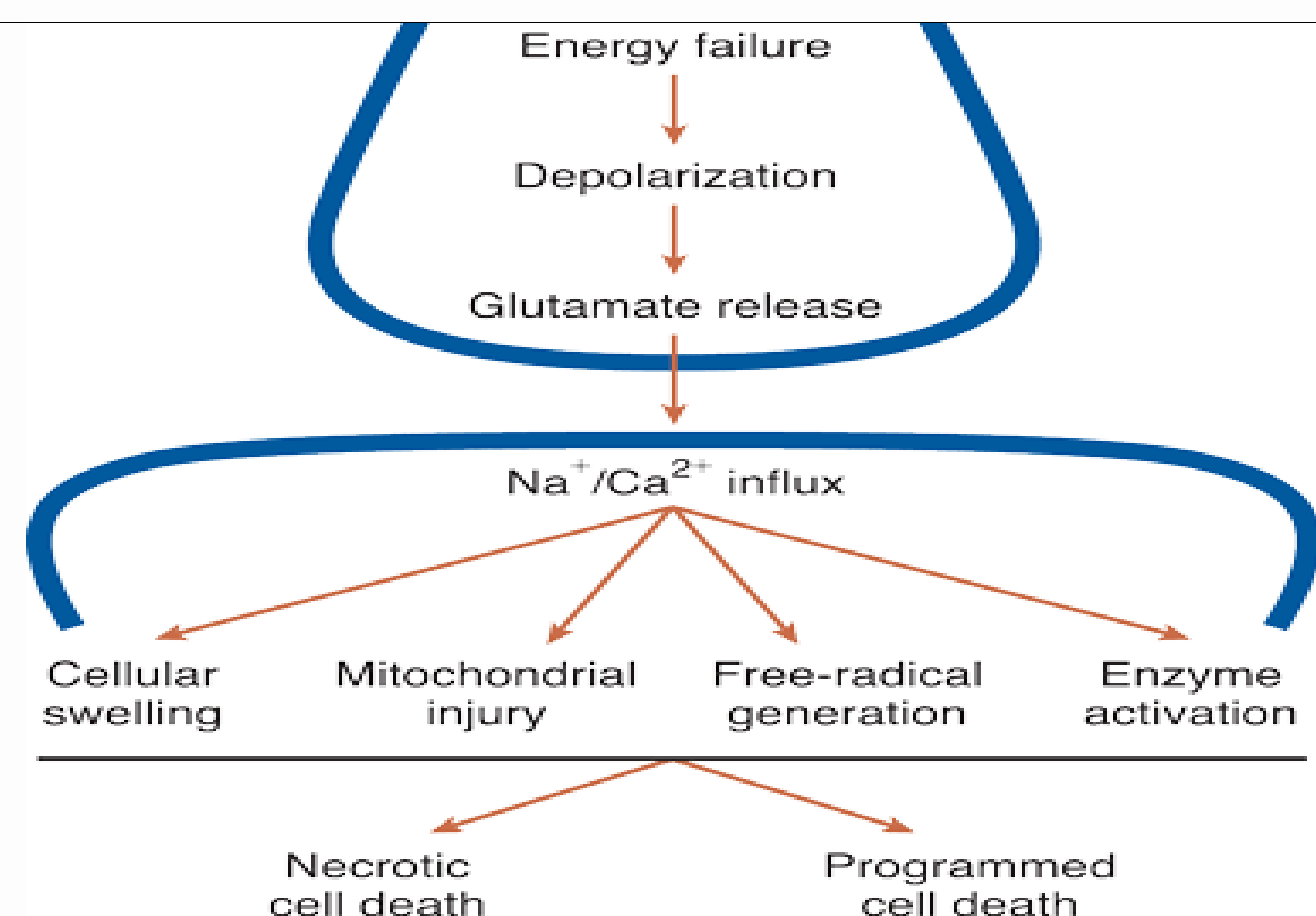
2D Echo before

Conclusions

- Newer therapeutic modalities in our arsenal to treat patients with as grim a scenario as cardiopulmonary brain resuscitation to preserve the patient's neurological function include therapeutic hypothermia.
- The clinician should exercise caution when the patient is on medications, even OTC.

References

- Safar PJ, Kochanek PM. Hypothermia after cardiac arrest. N Engl J Med 2002; 346:612-613.
- Zeiner A, Holzer M, Sterz F, et al. Hyperthermia after cardiac arrest is associated with an unfavorable neurologic outcome. Arch Intern Med 2001. 161:2007-12.
- Hypothermia after Cardiac Arrest Study Group. Mild therapeutic hypothermia to improve the neurologic outcome after cardiac arrest. N Engl J Med 2002; 346:549-56.
- Bernard SA, Gray TW, Buist MD, et al. Treatment of comatose survivors of out-of-hospital cardiac arrest with induced hypothermia. N Engl J Med 2002; 346: 557-63.
- Oddo M, Ribordy V, Feihl F, et al. Early predictors of outcome in comatose survivors of ventricular fibrillation and non-ventricular fibrillation cardiac arrest treated with hypothermia: a prospective study. Crit Care Med 2008; 36: 2296-301.



Case Presentation

- A 49-year-old female was comatose s/p CPR after sudden collapse.
- The patient was taking pseudoephedrine for decongestion prior to the episode.
- EKG s/p V fib showed profound QT prolongation (>550 msec).
- Therapeutic hypothermia was instituted followed by full neurological recovery.
- A biventricular device was placed.
- Genetic testing was to be completed on follow up.