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The role of clinical pharmacology and pharmacogenetics in electroconvulsive therapy : from safety to efficacy

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PROPOSITIONS

1. Monitoring neuromuscular transmission during ECT increases the safety and efficacy of ECT (this dissertation).
2. Succinylcholine shows higher variability in optimal dose for adequate muscle relaxation during ECT than rocuronium (this dissertation).
3. The transcription factor AP-1 (Activator Protein 1 complex) demonstrates the most regulatory effects on the interaction of previously studied genes involved in the efficacy of ECT resulting in both acute and chronic responses (this dissertation).
4. Preemptive genotyping for CYP2D6 has no clinical implications in depressed patients undergoing ECT (this dissertation).
5. Rifampin exacerbates the induced hypotension by propofol during induction of anesthesia (this dissertation).
6. The recommended dose of succinylcholine 0.9 mg/kg for ECT and observed variability in response by Bryson et al. is consistent with the suggested initial dose of 0.85 mg/kg and subsequent adjustment in this dissertation. (J ECT. 2012 Sep; 28(3):e29-30).
7. BDNF in blood increases after ECT similar to treatment with antidepressants. (Bruoni et al. World J Biol Psychiatry. 2014 Jul;15(5):411-8). The neurotrophic effects of BDNF may explain the rapid effects of ECT in major depressive disorder. (Kampman and Leinonen. Pharmacogenomics. 2013 Sep;14(12):1365-8)
8. Effectiveness of ECT should be studied in homogeneous subgroup of psychotic patients instead of studying overall improvement. (Heikman et al. BMC Psychiatry. 2002;2:2. Epub 2002 Jan 17)
9. "Modern theories of the action of ECT have not surpassed in conceptual elegance the 18th century claim that things burned because they contained phlogiston; ECT awaits its Lavoisier." (Abrams, R. (1997). *Electroconvulsive Therapy*. (3rd ed.) New York: Oxford University Press)
10. "Antipsychotic drug responses can best be explained as the combinatorial outcome of complex systems that interact at multiple levels." (Kirchheiner et al., *Molecular Psychiatry*, 2004, Vol. 9(5), p.442)
11. Thorough observation and careful thinking are the mainstays of a successful researcher. "Research is to see what everybody else has seen, and to think what nobody else has thought". (Albert Szent-Györgyi, 1893- 1986)
12. "That's the nature of research; you don't know what in hell you're doing". (Harold "Doc" Edgerton, 1903-1990)