Original article

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Epilepsy surgery for patients with genetic refractory epilepsy: a systematic review

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Epileptic Disorders

Systematic review of seizure outcome after epilepsy surgery in cases with genetic epilepsy

Genetic cause	*MRI lesional* Engel I	*MRI non-lesional* Engel I	*all* Engel I
Channel function/ synaptic transmission	1/9 (11%)	1/5 (20%)	2/14 (**14%**)
mTOR pathway	5/8 (53%)	2/4 (50%)	7/12 (**58%**)
Chromosomal other	23/35 (66%)	1/3 (33%)	24/38 (63%)
TOTAL	29/52 (**56%**)	4/12 (**33%**)	33/64 (52%)

*concerns germline mutations only

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Conclusions of systematic review

- mutations in genes associated with structural lesions (e.g. mTOR) → biomarker for good surgical candidacy?
- mutations associated with channel/synaptic transmission function → biomarker for poor surgical candidacy or targeted seizure treatment only?
- routine genetic testing may improve surgical evaluation of MRI-negative patients