Summary: Cost and cost-effectiveness of epileptic drugs

The cost and cost-effectiveness of levetiracetam compared to lamotrigine for generalised tonic and/or clonic seizures in children when sodium valproate in contraindicated.

P: Children with generalised tonic and/or clonic seizures

I: levetiracetam

C: lamotrigine

O: Cost and cost-effectiveness

Recommended dosage as per STG and package insert information sheet

Drug	Dose	Frequency
lamotrigine	0.2mg/kg/dose	Once daily
	Increase at 2 week intervals to 1-5mg/kg/dose	12-24 hourly (twice daily)
levetiracetam	20mg/kg/day	Divided dose (twice daily)
	Increase at 2 week intervals to target dose of 50mg/kg/day	Divided dose (twice daily)

Weight point estimates selected:

A) 5kg with dispersible or liquid dosage form and B) 20kg with tablet dosage form.

Total cost per annum per 5kg and 20kg child

Drug	5kg child	20kg child
lamotrigine (MPC)	R2485.17	R357.10
Levetiracetam (100% SEP)	R1154.95	R7438.62
levetiracetam (25% of SEP)	R288.75	R905.66

Due to the cost of dispersible tablets the total cost for lamotrigine is driven much higher in cases where a child requires a liquid dosage form. The cost decreases significantly if solid tablet forms can be utilised. Levetiracetam for the liquid formulations is less costly, and the cost-effectiveness analysis conducted for the Adult ERC demonstrates that the evidence on effectiveness reveals that lamotrigine and levetiracetam have similar effectiveness (0.02 QALYs more with lamotrigine as compared to levetiracetam – Adult CEA summary document).

The above costs for the 5kg scenario were inputted into the analysis with the following results with an estimated contract cost of 25% of SEP.

Drug	Expected costs	Expected effects	Incremental cost	Incremental effects	ICER
levetiracetam	R1789.31	0,444183667	0	-0,003153	R58 452,27
lamotrigine	R1973.61	0,447336667	R184,30	0	Not dominated

Conclusion

Levetiracetam solution is less costly than lamotrigine dispersible tablets, and has similar effectiveness.