neurology affecting these areas. Finally, we have established a novel and cost-efficient technique for quantification of neuroinflammation in a laboratory setting.

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INFLAMMATION INDUCED PH MODIFICATIONS IN AUTISM

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Introduction: There are many paediatric neurological conditions that have a significant inflammatory component which have been demonstrated most notably by an increase in microglia populations. In a number of degenerative conditions, these changes are associated with a reduction in brain pH. Due to this potential overlap between the low pH and the increased brain microglia, we decided to investigate whether the increased populations of microglia in autistic tissue caused the reduced brain pH.

Methods: Age, sex and cause of death matched prefrontal cortex sections were donated by the Institute of Psychiatry, King's College London. In vitro models were performed by stimulating murine neural tissue with inflammatory cytokines. Tissues were analysed using established histochemical techniques.

Results: An ~1 pH unit of difference between age, sex and cause of death matched tissue, and displayed a ± 0.03 standard deviation within replicates. Staining with pH sensitive dyes suggested that the pH differences were located in lysosome-like structures in putative microglial cells. However, more significantly we demonstrated using a novel in vitro mouse model that we could induce such a pH change and subsequently reverse it by inactivation of the NF- κ B/IKK signalling pathway.

Conclusions: These results suggest that NF- κ B represents a potential target for the therapeutic improvement of outcome in autism spectrum disorder. Furthermore, the identification of an association with pH changes opens scope for not

only therapeutic interventions but the possibility of diagnostic imaging based on these preliminary results.

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OPTIMAL THERAPY IN INFANTILE SPASMS

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Introduction: Infantile spasms is an epileptic syndrome composed of epileptic seizure, spasms and hypsarrhythmia on EEG, associated with psychomotor delay. NICE guidelines offer two first line treatments: hormonal therapy or vigabatrin.

Objectives: To analyse current experimental literature, specifically RCTs, comparing vigabatrin with hormonal therapy. The outcomes looked at included spasm control, EEG resolution, relapse rates, subsequent seizures, side effects, and psychomotor delay.

Methods: PubMed - searched with MeSH term "infantile spasms", additional terms; "vigabatrin", "ACTH" or "tetracosactide".

Results: The combined data from three RCTs comparing vigabatrin with hormonal therapy suggests that in terms of cessation of spasms (OR 0.42, 95%CI 0.21 to 0.80) and EEG resolution (OR 0.38, 95%CI 0.15 to 0.99), hormone treatment is effective in a significantly greater proportion of infants. There was no significant difference in terms of relapse rates, subsequent seizures, number of infants with side effects, and psychomotor development. However, there was a significant improvement in psychomotor development when comparing infants with and without spasm cessation ($p=0.008$).

An RCT comparing vigabatrin with hydrocortisone in tuberous sclerosis patients suggests that vigabatrin is effective in more cases (OR 13.8, 95%CI 2.21 to 86.35)