

P052 Statins act to suppress microglial activation in lipopolysaccharide-treated rat hippocampus

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It has been reported that lipopolysaccharide (LPS) increases microglial activation, a finding supported by our previous data, which indicates that peripheral LPS injection increases IL-1 β mRNA and protein in the hippocampus (Nolan *et al.*, 2004). We investigated the possibility that IFN- γ might trigger the LPS-induced microglial activation and report that hippocampal concentration of IFN- γ and IL-1 β are significantly increased in tissue prepared from LPS-treated rats compared with saline-treated controls. We assessed the effect of atorvastatin (ATV), which has been reported to downregulate microglial activation (Youssef *et al.*, 2002) on LPS-induced changes in hippocampus. Wistar rats (3-4 months) were divided into control and ATV-treated groups; ATV was given orally (5mg/kg/day) for 3 weeks. Following treatment, rats were anaesthetized by intraperitoneal injection of urethane (1.5mg/kg), further divided into two groups and challenged with i.p. injection of LPS (100 μ g) or saline. The data indicate that, while LPS significantly increased MHCII expression in control-treated rats, indicating microglial activation, there was no evidence of such a change in ATV-treated rats. The data rely on phenotypic assessment, confirmed by the finding that ATV reduces the LPS-induced increase in IL-1 β , a functional marker of microglial activation. We propose that ATV acts to suppress IFN- γ -induced microglial activation following LPS administration.