

Inflammatory mechanisms of mental illness: brain inflammatory response to interferon stimulation

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Aims. We hypothesise that peripheral IFN stimulation results in a brain inflammatory response via pathways of neuroimmune communication which in turn results in sickness-behaviour and depressive phenotype. We aim to determine if peripheral IFN stimulation results in brain inflammatory response including upregulation of inflammatory cytokines and chemokines.

Background. There is increasing interest in the role of dysregulated immune function and inflammation in the pathogenesis of psychiatric disorders including mood disorders and dementias. Immune mechanisms offer a new approach to investigating mechanism in addition to offering hope for new avenues of treatment.

Interferon (IFN) therapy in humans is known to be associated with a significant risk of developing depression, both during therapy and increasing risk of relapse in the years following exposure, yet the mechanism remains unclear. IFN stimulation in animal models may offer insights into this phenomenon, in addition to furthering our understanding the role of immune mechanisms in the development of psychiatric phenotypes.

Method. Mice (n. 42) were exposed to either IFN- α , IFN- γ or vehicle control using either osmotic pump or intraperitoneal injection over the course of 7 days. Mice were sacrificed, brains were dissected and RNA extracted. Inflammatory gene transcription within the brain was determined using real time quantitative polymerase chain reaction (RTqPCR). Absolute quantification was achieved using standard curves and reference gene. Statistical significance was determined using Mann-Whitney or ANOVA/Kruskal-Wallis depending on normality of data and number of groups.

Result. IFN γ stimulation is associated with a significant brain upregulation of a number of inflammatory cytokines and chemokines including IL1 β , TNF α , IL10, IFN γ , CCL2, CCL5, CCL19, CXCL10 and CCR5. However, unexpectedly we did not find IFN α stimulation to associate with brain inflammatory transcriptional changes.

Conclusion. This work demonstrates a brain inflammatory response to peripheral IFN γ stimulation. The inflammatory profile, including upregulated chemokines, suggests that recruitment of leukocytes across the blood brain barrier may be part of the immune response. Further experiments using existing tissues will explore if there are structural/cellular changes within the brain parenchyma. Further experiments within the group will seek to demonstrate if IFN treatment associates with sickness behaviour in order to determine if this is a clinically meaningful model. Surprisingly, we did not see similar changes in the IFN α treated group, which requires further investigation.

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Does my patient have sex ? - Mental health professionals' understanding of sexual health issues among their patients

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Aims. To assess the level of understanding and difficulties encountered when obtaining sexual health details of their patients among mental health clinicians.

Background. People with mental health problems, especially those treated with psychiatric medication experience greater rates of sexual difficulties than those in the general population. Mental health practitioners need to examine personal beliefs and attitudes about sexuality among people with mental health problems. Providing information about sexuality and sexual practice benefits and enhances the quality of life of people with mental health problems. Therefore taking a sexual history should be an integral part of psychiatric assessment.

Method. An online survey consisted of 17 questions to cover 3 areas of objectives mentioned above was created using Survey Monkey. A link to the survey was emailed to all the clinicians who perform psychiatric assessments. Response collection and data analysis was performed by the trust IT team.

Result. Total of 54 clinicians participated in the survey representing nurses, junior, middle grade doctors and consultants. Almost all stated that mental health patients have capacity to make appropriate decisions about their sexual behaviour patterns. 43% thought people with mental health problems don't have similar patterns of sexual behaviour compared to people without mental health problems. 11% stated that people with mental health problems do not experience greater rates of sexual difficulties than those in the general population. Nearly a third did not believe that telling patients about potential sexual side effects may lead to poor compliance. Nearly 70% stated taking a sexual history should be an integral part of psychiatric assessment. 44% reported lack of knowledge and skills when talking about sexual health and 33% avoided asking about sexual health due to lack of knowledge. Half of the clinicians avoided asking about sexual health due to the fear of embarrassing or causing distress to patients while 16% avoided asking about sexual health due to self-embarrassment. 65% talk about sexual health issues only if patients brought them up.

During last 3 clinical encounters majority never asked about sexual difficulties, high risk behaviour and drug side-effects related to sexual difficulties. A significant proportion of clinicians never asked about contraception from their female clients.

Conclusion. Survey revealed majority of mental health clinicians lack understanding and skills about sexual health issues highlighting the importance of raising awareness among clinicians about sexual health issues.

Stealth-vaping: a new era of illicit substance misuse? a systematic review and meta-analysis of the prevalence of electronic nicotine delivery systems for the consumption of illicit substances

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Aims. To estimate the prevalence of using Electronic Nicotine Delivery Systems (ENDS) for the consumption of illicit substances (illegal under UK Law). We hypothesised that this is an increasingly common mode of delivery.

Background. Using ENDS to consume nicotine is increasing in popularity worldwide with a prevalence in the UK of 6% and in

the USA 4%-6%. Existing studies have reported that people are switching to vaping because it is felt to be safer than smoking.

However there is also emerging evidence that this mode of consumption is increasingly being used as it is discreet and much less easy to detect, hence sometimes referred to as stealth-vaping. This appears to be driving a switch to vaping to administer substances other than nicotine, notably, but not exclusively cannabis, including concentrated forms of Tetrahydrocannabinol (THC) and synthetic cannabinoids. Anecdotally this practice is known to be occurring in psychiatric inpatient settings.

This is against a backdrop of the uncertain long-term effects of vaping and the emergence of case reports of the death of otherwise healthy young persons after using ENDS to consume cannabis.

Method. Search strategy: MEDLINE, EMBASE, Cochrane Database of Systematic Reviews, Grey Literature using Medical Subject Headings (MeSH), text words relating to vaping of drugs and hand searching journals.

Statistical methods: Synthesis of data was performed using inverse variance with double arcsine transformation in MetaXL. Heterogeneity was assessed with the Cochran's Q and I².

Result. From 970 abstracts, 61 papers were selected for full text review, 18 met the inclusion criteria. The total study population for the outcome of ENDS nicotine users who also use ENDS for the consumption of illicit substances was 9098. There was significant heterogeneity with a random effects model prevalence of 17% (95%CI 7%-32%). The total study population for the outcome of cannabis users who use ENDS to consume cannabis was 52708. There was significant heterogeneity with a random effects model prevalence of 23% (95%CI 12%-37%).

Conclusion. The use of ENDS to consume illicit substances is concerning as it appears to be relatively common practice. This was most notable in studies of existing cannabis users, younger people and medical marijuana users.

Given the uncertainty of long term health consequences and poor understanding of sudden death in some users, this study highlights an emerging and substantial public health concern.

Currently there is a paucity of primary studies to elucidate the impact on health.

Self-harm on a specialist adult eating disorder unit: a retrospective cohort study of patient characteristics and outcomes

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Aims. Deliberate self-harm (DSH) is common but rarely studied among inpatients with eating disorders. We sought to investigate the frequency of DSH among inpatients in a specialist adult eating disorders unit, and the association of DSH with comorbidities and treatment outcomes. We also investigated changes in these parameters during the pandemic.

Method. We included the records of 70 patients consecutively admitted to Cotswold House in Oxford between April 2018 and November 2020. Data were analysed using Microsoft Excel using descriptive statistics. For comparisons, student T-tests were used for continuous variables and Chi-square tests used for categorical variables.

Result. 99% of patients were female; their ages ranged from 17 to 67 years (mean 30.7). 81% had a primary diagnosis of anorexia nervosa, and 67% had a history of DSH prior to admission.

There was a total of 100 incidences of DSH, of which 12% required transfer to a general hospital for medical treatment.

Frequency of self-harm decreased with time throughout admission (17% self-harming on admission, vs 7% at discharge, $p = 0.043$).

Compared to those with no history of DSH, patients who self-harmed during admission were more likely to be detained under the Mental Health Act (45% vs 17.4%, $p = 0.003$), and to have psychiatric comorbidities (85% vs 35%, $p = 0.001$). Patients whose self-harm required transfer for general hospital treatment had a lower mean discharge BMI (18.18kg/m² vs 20.23kg/m², $p = 0.039$), longer admission (105.9 days vs 78.1 days, $p = 0.037$), and gained weight at a slower rate (0.26kg/m²/week vs 0.43kg/m²/week, $p = 0.048$) than those who did not require transfer.

During the pandemic, the frequency of DSH doubled on the ward. Overall outcomes were similar, however mean length of admission was lower during the pandemic (67.83 vs 89.94 days, $p = 0.046$), and patients regained weight more rapidly (0.43kg/m²/week vs 0.28kg/m²/week, $p = 0.003$) than prior to it.

Conclusion. Self-harm during admission was seen in 29% of patients and was associated with the presence of comorbid psychiatric diagnoses. The frequency of DSH much reduced between admission and discharge, suggesting a beneficial effect of treatment. Medical transfer for DSH, considered as a proxy measure for severity, predicted poorer outcomes in weight restoration. We also noted an increase in rates of DSH during the pandemic, which may have resulted from a combination of increased psychosocial stressors and a reduction in admission capacity in eating disorder units.

Psychiatric presentations of patients with COVID-19: a retrospective review of 100 consecutive patients seen by liaison psychiatry services

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Aims. Coronavirus disease 2019 (COVID-19) is associated with higher rates of psychiatric morbidity due to various factors, including quarantine, social isolation, stigma, financial difficulties and direct and indirect central nervous system impact of severe acute respiratory syndrome coronavirus 2 (SARS-Cov-2).

This study aimed to describe the psychiatric morbidity of patients with COVID-19 referred to liaison psychiatry services in Qatar.

Method. This study was a retrospective review of patient records of the first 100 consecutive SARS-Cov-2 positive patients referred to liaison psychiatry services. The study was approved by the Hamad Medical Corporation Institutional Review Board (IRB) (MRC-05-072). Data were analysed using descriptive statistics.

Result. The majority ($n = 92$) of 100 included patients were male and median age was 43 years. Patients were of diverse background with majority of South Asian (Indian, Pakistani, Bengali, Nepalese, and Afghan) ($n = 60$), followed by Qatari ($n = 18$) background. Mean length of hospital stay was 26.51 days.

35 patients had severe or critical COVID-19 pneumonia, and 67 had at least one underlying physical comorbidity. Significant psychosocial stressors other than positive SARS-Cov-2 status, including lockdown, quarantine, finances and relationships issues were identified in 48 patients.