Afternoon session

After a hefty but very useful morning session, we gathered for the afternoon session, which focused on clinical cases. Very interesting and complex cases were discussed and videos presented. The audience appeared more buoyant, possibly as a result of a good probiotic meal! The speakers were asked a variety of questions which were handled well. Dr Bird's case of restless leg syndrome with frontal lobe seizures was the pick of the day.

Last but not least, the poster presentations during the lunch break were of high quality.

As with all good things, this conference had to come to an end, albeit on a happy note and with promise that it will be even more interesting and exhilarating next year.

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SERVICE REPORT

Forensic neurorehabilitation service for people with acquired and degenerative brain injuries: 5 years on

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The acute and chronic neuropsychiatric sequelae of acquired and degenerative brain injuries are well known.[1] Irritability, aggression, impaired judgement, disinhibition, personality changes and other symptoms may predispose patients to present to psychiatric services with a range of challenging and offending behaviours. Some of these patients may require compulsory care and treatment in secure/forensic psychiatric settings because of their risk profiles. Most patients with neuropsychiatric presentations are misplaced in generic forensic settings due to their cognitive impairment and specific neurorehabilitation needs. This article describes a forensic neurorehabilitation service, now in its 6th year, developed specifically to meet the needs of this patient group, and provides an overview of the characteristics of the patient group, care pathway and service provision.

The service

St Mary's Hospital in Warrington (part of the St George Healthcare Group) developed the first medium secure service providing neurorehabilitation services for men with acquired brain injuries in the UK and Ireland, because of the lack of provision for this patient group. It currently provides medium and low secure services, including long-term low secure and complex care wards, with a total of 58 beds.

Development of a secure forensic neurorehabilitation service commenced in 2005 and was led by neuropsychiatrists, neuropsychologists and nursing staff experienced in working on neuropsychiatric units. The first patient was admitted in May 2006. The development process involved:

- recruitment and training of staff in specialist brain injury cognitive neurorehabilitation, risk management, security standards and forensic issues
- developing links with community-based brain injury services and regional secure units
- ongoing educational activities to create awareness among external professionals, including funding commissioners and other forensic hospitals through visits and academic meetings
- reconfiguring of service provision to provide for patients with degenerative brain conditions.

The service is also involved in:

- the Royal College of Psychiatrists' Quality Network for Forensic Mental Health Services' reviews
- regular secure commissioning reviews
- research and presentations at national and international conferences.

Over the years, psychiatrists employed have included a combination of neuropsychiatrists, general adult psychiatrists and forensic psychiatrists with a special interest in neuropsychiatry. Currently, the multidisciplinary team includes consultant forensic psychiatrists, a consultant neuropsychiatrist, registered mental health nurses, a full-time registered general nurse, rehabilitation support therapists, a specialist nurse in neurorehabilitation, occupational therapists, a consultant neuropsychologist, a consultant forensic psychologist, a speech and language therapist, a physiotherapist (on referral) and social workers.

Referrals

Referrals are received from special hospitals, other secure units (medium and low), courts, prisons and occasionally general adult psychiatric wards, non-secure brain injury services and community placements.

Between 2006 and 2010, a total of 126 referrals were received with an admission rate of 61% and an average of 13 admissions per year. Geographically, referrals were received from across the UK, with the majority of referrals from the North West (46%) (Fig. 1).

In-patient population

The annual number of admissions is shown in Fig. 2. A cross-sectional study of all in-patients in August 2011 revealed a total of 43 patients who were detained in medium (33%) and low (67%) secure wards of the hospital under various legal categories.[2] In total, 58% of patients had been admitted from other psychiatric or general hospitals under civil sections and 42% of patients had been transferred from prisons or diverted from the criminal justice system for treatment. The age range was 22–65 years (mean 41.2).

Risk

Patients presented with a range of risk issues/challenging behaviours (Fig. 3). Verbal aggression and violence against a person was the most common; fire-setting behaviour was the least common. The majority of patients (73%) presented with risks in five or more domains, indicative of the complex risk profile of this patient group.

Treatment programmes

All patients presenting with cognitive impairments and challenging behaviours are managed in this service within a cognitive neurorehabilitation framework. The focus is on reducing cognitive loading, compensating for any cognitive deficits; and reducing the inherent tensions in social interactions as far as possible, thus lessening the opportunity for conflict. Patients are cared for in different wards based on the level of security required, their level of cognitive functioning, physical healthcare needs and peer group. Patients requiring a higher degree of physical assistance due to motor and other neurological deficits

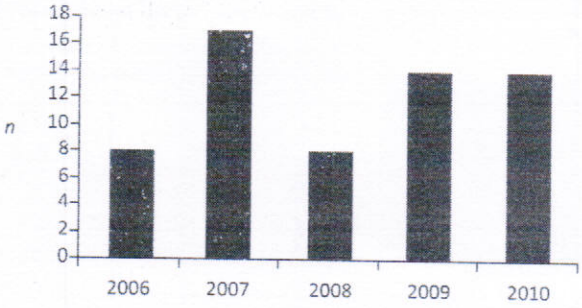

Fig. 2 Number of new admissions per year.

are cared for in a specifically designated complex care ward.

The treatment programme includes provision of external compensatory aids (e.g. diaries, planners), regular orientation, providing a structured daytime routine, antecedent control, managing communication and providing information commensurate to the patient's level of cognitive functioning, speech and language therapy, occupational therapy, physiotherapy, and psychological work tailored to meet the needs of patients with cognitive deficits. Patients are exposed to a range of rehabilitative and recreational activities, including cooking, budgeting, arts and crafts, gardening, woodwork and gymnasium. Psychoeducational interventions such as brain injury awareness and psychological interventions to address offending behaviour and substance misuse are offered either in group or individual sessions.

Psychotropic medications are used when required to manage aggression, impulsivity and any comorbid anxiety, mood or psychotic disorders. A full-time physical health nurse and weekly GP clinics in the hospital enable ongoing monitoring and management of physical health problems, including epilepsy which is commonly associated with traumatic brain injuries. Annual physical healthcare checks are also provided.

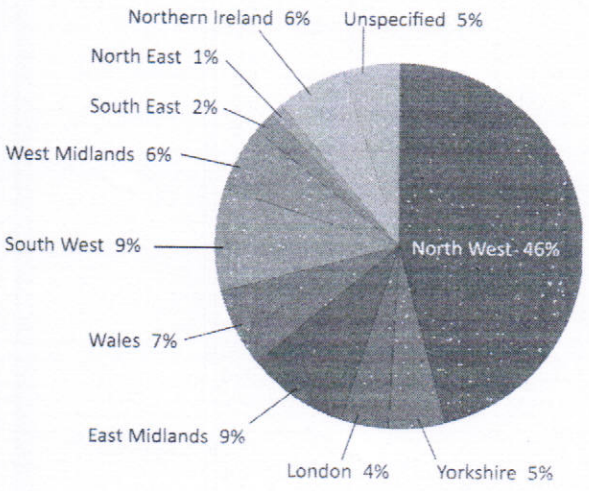

Fig. 1 Referrals by region.

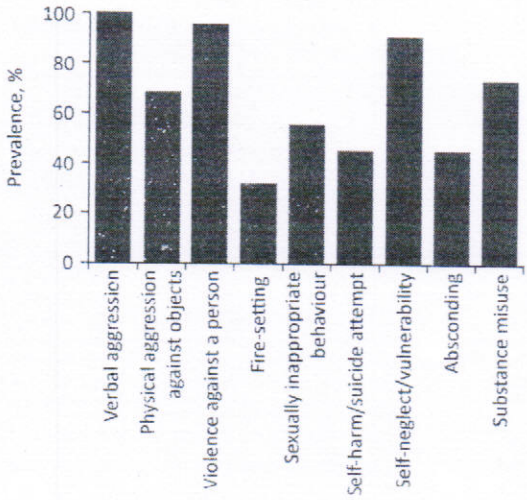

Fig. 3 Prevalence of risk domains.

Outcomes

A total of 24 patients were discharged between 2006 and 2010 (average of about 5 patients per year). Discharge destinations are shown in Fig. 4. The majority of patients (50%) were discharged to a non-secure step-down service or community placement following treatment and progress in hospital. About 25% of patients were repatriated to National Health Service (NHS) settings by funding agencies either following development of similar specialist services within local NHS secure units or because they were deemed more manageable within non-specialist services following treatment. A number of patients were returned to prison following assessment as they were not considered suitable for hospital diversion. One patient was transferred back to a high secure hospital following trial leave and another patient was transferred to a similar specialist service closer to his home area. Two patients died as a result of physical health problems.

The length of stay in hospital is given in Fig. 5. About 50% of patients ($n = 12$) were discharged within 1 year. The duration of admission ranged from about 2 months to 4 years and 3 months (mean 1 year and 7 months; median 1 year and 1 month).

Discussion

The most prevalent disorder secondary to brain injury requiring management within this secure neurorehabilitation service has been organic personality disorder (70%), either present on its own (44%) or with other comorbid conditions (26%) (Table 1). Organic personality disorder is characterised by a significant alteration of the habitual patterns of premorbid behaviour following brain injury. It affects (social) judgement and (moral) reasoning and results in poor insight and lack of impulse control. Planning and anticipating the likely personal and social consequences of behaviour is often compromised, resulting in poor foresight. Cognitive impairment may exclusively be in the domain of executive functioning or there may be additional impairments involving memory, which may make it more difficult for individuals to acquire social skills, learn from past experience and change their behaviour. They may present with a range of risk/challenging behaviours including violent and sexual offences. It is difficult to apply standard treatment programmes (e.g. sex offender treatment programmes) because of the cognitive impairments associated with traumatic brain injury. Any psychological interventions have to be innovatively adapted or developed to address offending/risk behaviour.

The most common cause of brain injury noted in the sample described was trauma (53%) (Table 2), which is consistent with previous research. Indeed, there is now increasing evidence suggesting a greater prevalence of traumatic brain injuries in offending populations compared with the general population. A meta-analysis estimated a prevalence of 60.5% in the offender population compared with 5–25% in the general population.[3] Similarly, an American study compared the pooled rates of the lifetime prevalence of traumatic

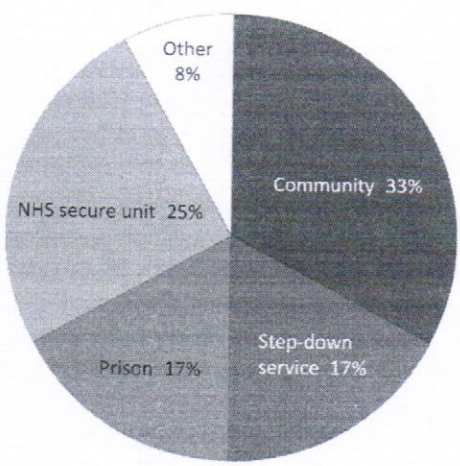

Fig. 4 Discharge destinations. NHS, National Health Service.

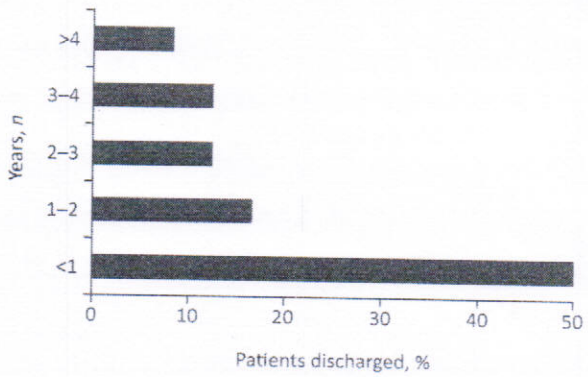

Fig. 5 Duration of admission.

Table 1 ICD-10[a] diagnoses

Diagnosis	%
Organic personality disorder	44
Organic personality disorder with organic delusional disorder	13
Organic personality disorder with organic amnesic syndrome	5
Organic personality disorder with comorbid mental illness (paranoid schizophrenia/schizoaffective disorder)	8
Dementia in Huntington's disease	5
Frontotemporal dementia and paranoid schizophrenia	2.5
Paranoid schizophrenia with executive dysfunction	8
Other specified or unspecified mental disorder due to brain damage and dysfunction and to physical disease (e.g. hydrocephalus, epileptic psychosis)	12
Alcohol-induced dementia	2.5

a. World Health Organization. *The ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines*. WHO, 1992.

Table 2 Cause of brain injury/cognitive impairment

Cause	%
Trauma (assaults, falls or road traffic accidents)	53
Anoxia (cardiac arrest, drug overdose)	12
Infection (viral encephalitis)	5
Chronic alcohol/illicit drug use	7
Neurodegenerative (Huntington's disease, demyelinating disorders)	7
Other (chronic schizophrenic illness, epilepsy, hydrocephalus, post-neurosurgery)	16

brain injury in prison and general populations and found a higher prevalence in the incarcerated group.[4]

It is important to recognise that the complex needs of this patient group are unlikely to be met in generic forensic settings and general adult psychiatry wards. The personality disorder and cognitive impairments lead to a lack of therapeutic engagement and could contribute to increased risk to the patient and to others. Treatment methods have to be adapted to meet the needs of this clinical group. A significant number of patients referred to this specialist secure neurorehabilitation service had proved unmanageable in other non-secure/generic services due to their acquired brain injuries, cognitive difficulties and significant risk issues, including violence/aggression.

The patients admitted to the service have had variable outcomes. Most have been successfully discharged to non-secure/step-down acquired brain injury services or community placements, whereas others have been repatriated to NHS services following development of similar services locally or following improvement in the patients' presentation that rendered them more manageable in generic services. As patients with cognitive impairments, especially executive functioning, have difficulty adapting to change and dealing with novel situations, it is always necessary to develop robust transitional or aftercare plans with local services/providers to enable successful transition of patients into another service or community.

It has been suggested that traumatic brain injury may be a risk factor for offending behaviour and poor mental health outcomes.[5] Although the exact association between brain injury and offending behaviour remains to be ascertained, there is increasing recognition of undiagnosed brain injuries in the prison population which may be contributing to offending behaviours. We are not aware of any study estimating the prevalence of traumatic brain injury in generic secure psychiatric settings in the UK. A more accurate estimate of the prevalence of traumatic brain injury in prisons and secure psychiatric settings may inform resource allocation so that there is improved screening, diagnosis and management of mentally disordered offenders with neurorehabilitation needs.

Authors

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