A Staging Approach to the Treatment of Schizophrenia

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Abstract

In this article we describe the concept of staging and apply it to schizophrenia as a way to identify the different stages in the course of the illness and link these with their neuroimaging, and hence neuropathological and clinical correlates. Identifying the stage of the illness of schizophrenia in particular patients is useful in planning treatment, establishing treatment and optimising outcomes.
Keywords: schizophrenia, neuroimaging, outcomes, staging.

Staging is an approach to the planning of treatment in chronic illness which has been particularly used in treatment of cancer. Staging systems exist for most cancer types, and whilst there are competing staging systems, the most universally-accepted and clinically useful staging system is the tumour node metastasis (TNM) system, which classifies cancers by the size and extent of the primary tumour (T), involvement of regional lymph node (N), and the presence or absence of distant metastases (M), supplemented in recent years by carefully selected non-anatomic prognostic factors. This system is maintained collaboratively by the American Joint Committee on Cancer (AJCC) and the International Union for Cancer Control (UICC), and is periodically modified in response to newly acquired clinical data and improved understanding of cancer biology and factors affecting prognosis (1).

The agreement of classification of cancer cases at national and international levels provides a method of clearly conveying clinical experience without ambiguity (AJCC). Hence, in order to develop an analogous model in a mental illness such as schizophrenia, it is necessary to demonstrate that there are well-defined clinical presentations associated with each individual stage, and that these stages are mirrored by anatomical or pathological changes which can be observed in the brain, which can be related to the changes in the clinical picture. The development of MRI techniques has enabled us to observe such anatomical, pathological changes in the brain, which also reflect changes in brain plasticity and are mirrored by changes in brain functioning, reflected by changes in cognition which can be observed and tested.

We have recently argued that this staging approach can be applied to schizophrenia in an analogous way (2).

Such an approach argues that there are different stages in the development of schizophrenia and that therefore different stages of the illness will require different interventions to optimise treatment, be they pharmaceutical, social or psychological. Furthermore, logically, the different stages will require different goals of treatment and will have different expected outcome measures. Thus, the aim of treatment in the first or 'at-risk mental state' stage of psychosis is to prevent psychosis developing, while the aim of the second stage, otherwise known as the 'first-episode' stage, is to end the psychotic episode so that the patient can return to work or education. The third stage of schizophrenia is the phase of chronic illness, and here the goal will be, depending on the severity of the illness, to limit the positive and negative symptoms of the illness, to prevent relapse and to optimise social inclusion, promoting a return to work if possible. Such a staging approach to schizophrenia is underpinned by the neuroimaging evidence, since the loss of gray matter linked with schizophrenia does start in the prodromal 'at-risk' phase, becomes more prominent in the first episode, and then becomes incrementally more severe in the later stages of the disease (3-5).

Furthermore, different stages of the illness appear to be mirrored in different patterns of change in structures, including the hippocampus and the amygdala (6), as well as changes in pituitary volume (7,8).

It is interesting that whereas pituitary volume increases during the prodromal phase of schizophrenia –the first stage, it becomes smaller in size by the chronic phase - stage 3. Thus, a 'staging approach' to schizophrenia does provide a logical framework for the development of a care pathway for schizophrenia, with different stages, or phases requiring the development of specialised teams with different expected outcomes, but who will always, in each phase of the illness, strive to optimise treatment in order to achieve the best results. Hence, such a pathway may include an 'at risk mental health' team, which will attempt to reduce the rate of transition to full psychosis in patients who are developing 'prodromal' symptoms. This would be followed in the pathway by a first-episode service which will work assertively with patients so as to deal with the first episode and return patients to work or education and, at the other end of the spectrum, assertive outreach teams will work with those difficult-to-treat patients who have demonstrated the most serious deterioration in functioning. Also included in this last phase however, are those patients who are returned to community mental health teams after three years in an early intervention service, and who are not deemed ill enough to require referral to the assertive outreach teams. These constitute the majority of patients with long-term schizophrenia. Unfortunately, since community mental health teams have other priorities, and indeed are oriented to dealing with patients with relatively less severe forms of mental illness, many of these patients may receive suboptimal care, sometimes consisting of the simple delivery of medication within a depot or clozapine clinic, and without the systematic delivery of psychosocial interventions . As a result, in many cases, social inclusion is not optimised, as a direct result of the loss of the assertive approach to care. It is therefore not surprising that both the LEO (9) and the OPUS (10) studies have reported a loss of improvement in outcomes within five years of first treatment, after patients have been transferred from early intervention teams to the care of community mental health teams.

LEO (9) demonstrated that after 5 years any advantage in terms of bed-days and admission to hospital was lost by patients who had received treatment as usual.

OPUS (10) have reported that, while the intensive early-intervention program improved clinical outcome after 2 years, the effects did not appear to be sustained at 5-year follow up. However, the number of patients living in supported housing and the number of days in hospital at 5-year follow up appeared to favour the assertive early-intervention program (10). It has also been reported that the rates of recovery (defined as no psychotic or negative symptoms, living independently, GAF (f)>59, working or studying) and institutionalisation at 2 years and 5 years during this study were the same, being 18%recovery after five years, and 13% were institutionalised either at hospital or supported housing after five years. Thus it appeared that in this group, the illness did not deteriorate progressively, since no changes in the rates were seen from two to five years (11). Presumably this shows that only a proportion of patients deteriorate progressively, previous studies suggesting that those who deteriorate are about 16% of all patients with schizophrenia. OPUS have also reported that patients who were offered inpatient rehabilitation and supportive psychotherapy used more hospital bed days and spent more time in sheltered accommodation than those who were given assertive treatment in the community. Although this was a small sample, it did suggest that patients who received assertive treatment for two years had a better quality of life over five years (12).

It is of interest that a study in Russia (13), where patients were followed up assertively for five years, has shown no such loss of improvement in outcomes. This seems to illustrate that, if appropriate care for the appropriate stage of psychosis is offered, then the outcomes of treatment will be optimised. It therefore appears urgent that the development of ongoing assertive, specialised teams for psychosis, as suggested by Singh (14), should be developed in order to complete the Schizophrenia Care Pathway.

GP comment

What have I learned from this paper?

1. Schizophrenia has different stages requiring different management.

2. Continued provision of assertive outreach services for schizophrenia is likely to lead to a better long-term outcome.

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