

## A Follow-up Study of Severe Puerperal Psychiatric Illness

LALITHA DA SILVA and EVE C. JOHNSTONE

**Summary:** The outcome in clinical and social terms of a psychiatric illness arising within 1 year of confinement or termination of pregnancy and requiring on-going care was studied after a period of 1–6 years in 47 women. The outcome was related to the earlier features of the illness and to personal and historical features. Social impairment and continuing psychopathology occurred in many cases. The only factor which significantly related to poor outcome was an initial diagnosis of schizophrenia.

Although detailed studies of severe puerperal psychiatric illnesses have been carried out in the past (Protheroe, 1969) and there has been much recent work on minor psychiatric disturbance in the puerperium (Kumar and Robson, 1978; Paykel *et al.*, 1980) there have been few recent studies of the outcome of severe psychiatric illness occurring puerperally. Although it is sometimes said that the outcome of puerperal psychosis is benign (Martin, 1958) this is not always so (Hemphill, 1952; Protheroe, 1969). The present study was conducted with a view to determining retrospectively the clinical characteristics of a well-documented population of patients who required ongoing care for psychiatric illnesses arising in the puerperium and to relating these characteristics to the outcome in clinical and social terms after a period of up to six years. For the purposes of the study ongoing psychiatric care was defined as inpatient care, or outpatient care requiring more than one visit. Patients who developed psychiatric illnesses of this kind within a year of termination of pregnancy were also included in the study, because there was anecdotal evidence to suggest that some patients were admitted with similar illnesses following both termination and confinement and it appeared that the study provided an opportunity of examining this issue.

### Method

The casenotes were obtained of all patients who were admitted or who received continuing outpatient care under the supervision of two consultant psychiatrists at Northwick Park Hospital, between December 1974 and May 1980 for a psychiatric illness which began within one year of confinement or termination of pregnancy. The Syndrome Check List of the Present State Examination (Wing *et al.*, 1974)

was applied to the casenotes and additional personal and historical information was obtained. This included age, parity, civil state, husband's occupation, past psychiatric history, family history of psychiatric illness and history of complications of the pregnancy, of delivery or concerning the child. Any circumstance requiring inpatient obstetric care prior to the admission at term for confinement was regarded as a complication of pregnancy. Excessively prolonged labour as defined by the obstetricians, forceps delivery and caesarian section were regarded as complications of delivery. Any circumstance leading to the transfer of the baby to a unit for neonates requiring special care was regarded as a complication to the child.

The patients were then contacted and asked if they were willing to be interviewed about their state of health since they became ill. They were interviewed especially for this purpose. The patients were mainly seen in their own homes and the interviews which were done entirely by the authors were carried out during a six week period (May–June, 1980). At this interview the Present State Examination was conducted and a simple assessment of the patients' social functioning was made using a modified version of the rating scale devised by Cooper. Cooper (1961) rated the patients on economic status, social liability and self care. As puerperal women would often be expected to be financially dependent, the patients in this study were rated only on social liability and self care—each on a 3 point scale. The patients were asked to date the onset and course of their illness. Details were also obtained about the outcome for the child in terms of the child's health and whether or not it was possible for it to be looked after by the mother. The amount of family support available to the mother was graded on a 5 point scale.

### Results

This study concerns 51 episodes of illness in 47 women. Forty-eight episodes followed confinement and 3 termination of pregnancy. In 4 women there were two episodes of illness during the period of the study. In 3 of these cases there were two confinements and in 1 case, one confinement and one termination. There were two cases of twin pregnancy and thus there were 50 babies involved in the study. The 48 cases following confinement are considered first and the 3 following termination discussed thereafter.

Twenty-seven of the 45 women were primiparous and 18 multiparous. Their mean age was 28.04 SD 4.8 years, 42 were married, one was unmarried but stably cohabiting, one married after confinement and one had no firm relationship with the child's father. Thirty-six patients were born in Britain or Ireland, 4 in other European countries and the remaining 5 in Asia. Seven cases were of social class I, 8 of social class II, 22 of social class III, 4 of social class IV and 4 of social class V. A family history of psychiatric illness was obtained in 20 cases (schizophrenia 3 cases; psychotic illness not otherwise specified 5 cases; schizoaffective state 1 case; affective illness 9 cases; neurotic illness 2 cases) but as in general there was no means of checking the patients' statements in this matter this information is of limited value. Sixteen patients had complications of pregnancy, 21 had complications of delivery and in 6 cases there were complications concerning the child.

#### *The nature of the initial illness*

The nature of the initial illness was determined by the application of the Syndrome Check List of the Present State Examination (Wing *et al.*, 1974) to the casenotes and in terms of the diagnosis using the International Classification of Disease (WHO, 1978) made at the time of the illness. These diagnosis are shown in Table I, the patients having been broadly grouped into 4 main categories (schizophrenic/paranoid; affective; neurotic; other) on the basis of the PSE classification.

The temporal relationship between confinement and the development of the psychiatric disturbance was considered in terms of interval between confinement and first psychiatric contact and in terms of the patient's statement regarding the onset of the symptoms. Four of the schizophrenic patients were unable to date the onset of their symptoms because of lack of insight. In the remaining 16 schizophrenic cases the stated time of onset was between 1 day and 8 weeks after confinement (mean 1.8 SD 2.14 weeks). In 14 of these cases the onset was said to be within two weeks of the birth. The interval between confinement and first psychiatric contact in the 20 schizophrenic cases

ranged from 2 days to 40 weeks (mean 8.9 weeks SD 13.48). According to the 22 patients with affective illness the interval between confinement and the onset of symptoms ranged from 1 to 22 weeks (mean 4.45 weeks SD 4.9). In eleven cases the symptoms developed within two weeks of the birth. The interval between confinement and first psychiatric contact in this group ranged from 1 to 36 weeks (mean 14.7 SD 11.6 weeks). The interval between confinement and the onset of symptoms in the neurotic patients ranged from 1 to 40 weeks (mean 15.2 SD 17.7 weeks), while the interval between confinement and first psychiatric contact ranged from 2 weeks to 44 weeks (mean 20 SD 19.6 weeks). In only one case in this group did the symptoms develop within two weeks of the birth.

The treatment given was naturally variable. Sixteen of the twenty schizophrenic episodes were treated with neuroleptics. In three episodes these drugs, although prescribed, were almost certainly not taken, and the illness which was based upon Cushing's syndrome was treated only with metyrapone and dexamethasone. In addition tricyclic antidepressants were given in eight episodes, ECT in three and lithium in two. Tricyclic antidepressants were given in 18 episodes of affective illness and in this group, five cases received neuroleptics, three had other antidepressants, two had ECT, one had lithium and one had benzodiazepines. Of the neurotic cases two received benzodiazepines, one tricyclic and other antidepressants and one other antidepressants only. Of the two remaining cases one had lithium and one other antidepressants and neuroleptics. The mean duration of inpatient care was 9 weeks and the mean duration of outpatient care for the total sample was 40 weeks. There were 2 cases of maternal suicide, incidents of self injury to 10 additional mothers and 6 patients admitted that they actively harmed their children often on more than 1 occasion. In a further 2 cases the child's health was impaired because of the inadequate care provided by the mother.

#### *The mother's condition at follow-up*

Forty-four of the 45 patients were traced and 39 interviewed. Of the 5 who were traced but not interviewed, 2 were dead, 1 refused to be interviewed but wrote to say that she had had a further hospital admission for a second puerperal psychiatric illness, and we had information from other doctors to the effect that the remaining 2 patients were at home but unwell.

One of the women who died killed herself during the eighth month of a continuous period of inpatient care for the index illness, and the other recovered from the index illness, left the district and was later admitted to another hospital where she killed herself.

Of the 39 patients who were interviewed 3 were still

TABLE I  
Nature of puerperal index illnesses and condition at follow-up in 47 women

Diagnostic grouping (based on syndrome check list of index illness)	Previous psychiatric history	Inpatient/outpatient treatment for index illness	PSE classification of index illness	ICD classification of index illness	PSE at follow-up	Social outcome
Schizophrenic/paranoid 20 episodes in 18 women	nil—8 possible—1 neurotic—2 affective—1 schizo-affective—1 schizophrenia—1 schizophrenia—4	16 inpatient 4 outpatient	NS—6 DS—5 NSPD—2 DP—2 DP/AP—2 UP?/PD—2 NS/PD-MN—1	Paranoid schiz Acute schiz episode Hebephrenic schiz Residual schiz Catatonic schiz Schizo-affective Mixed affective Depressive psychosis Secondary to endo- crine disease	7 NS—3 4 DP—2 1 UP—1 1 PD—2 1 SD—1 2 AN—1 2 HM?—1 1 dead—2 1 not seen—4 1	Good—3 Poor—11 Dead—2 Unassessed—2
Affective 22 episodes in 21 women	nil—8 possible—4 non-puerperal affective illness—4 puerperal affective illness—5	10 inpatient 12 outpatient	PD—16 MN—2 HM—1 AP?—1 SD—2	Manic/depressive depressed Depressive neurosis Anxiety state Manic/depressive manic Manic/depressive mixed Monosymptomatic psychosis	NO—5 PN—4 SD—3 ND—2 PD—2 HM?—2 ON—1 AN—1 XN—1 1	Good—15 Poor—6
Neurotic 4 episodes in 4 women	nil—1 non-puerperal neurotic—2 puerperal neurotic—1	1 inpatient 3 outpatient	ND—3 PN—1	Depressive neurosis Phobic anxiety Acute situational Disturbance	1 NO—1 2 SD—1 ND—1 1 PN—1	Good—2 Poor—2
? Well 2 episodes in 2 women	nil—1 affective illness puerperal and non-puerperal—1	1 inpatient 1 outpatient	NO—2	Explosive personality disorder Manic/depressive Psychosis circular	1 XN—1 1 HM—1	Good—1 Poor—1

receiving inpatient care for their index illness and 14 were still attending outpatients. One of those remaining was on prophylactic lithium and the others were on no medication. The mean duration of follow-up was 111 weeks. The condition at follow-up in terms of the Present State Examination (Wing *et al*, 1974) in the 39 cases interviewed is shown in Table I. Thirty patients regarded themselves as having made a full recovery at some stage but by their own estimate the mean length of time between confinement and recovery was 68.9 weeks. The standard of self care and social functioning was assessed at interview (taking into consideration the patient's account, the relatives' account and the authors' observations at the time) and in two cases by other doctors. The results of this assessment in relation to the diagnostic groupings are shown in Table I.

*The condition of the children at the time of follow-up*

Two of the 50 babies died. One died of congenital heart disease and although this death cannot be clearly related to the mother's state of health, the fact that she was on a variety of anxiolytic drugs early in the pregnancy should perhaps not be discounted. The death of the other baby was related to the mother's disturbed mental state (*vide infra*). Of the 48 living babies, 40 were cared for by the mother with or without family support and the remaining 8 were cared for entirely by relations or on a daily basis by the social services. As mentioned above, six mothers admitted to having caused injury to their babies, and two babies became ill because of inadequate care. None of these children is thought to have suffered lasting harm.

*Outcome of the illness. Relationship with initial features and other factors*

For the purpose of examining this question the population was initially divided (a) into those with a good and a poor social outcome (a good social outcome is a minimum possible score on social liability and impaired self care and a poor outcome is a score of more than this) and (b) those with schizophrenic, affective, neurotic or no morbid features or only mild residual features at follow-up as assessed by PSE. Neither the demographic variables, the factors relating to the pregnancy or confinement nor the amount of social support available to the mother had any relationships with the outcome in social or clinical terms. The only factor which showed a marked difference between those with a good and those with a poor social outcome was the nature of the initial illness, a schizophrenic illness being associated with a poor social outcome ( $P < 0.01$ ). When clinical outcome was considered, again the only factor of relevance

appeared to be the initial diagnosis. For this reason the factors determining outcome were considered separately in terms of the 4 diagnostic groups based upon the syndrome check list of the initial illness (Table I).

(a) *Schizophrenia/paranoid*

There were 20 episodes of illness in 18 women. In one woman the illness, although schizophrenic (NSPD on PSE) in form, was later found to be based upon Cushing's syndrome resulting from atopic ACTH secretion. Two of the 18 women had killed themselves by the time of follow-up, 1 was untraced and 3 would not attend for interview although we had information from general practitioners regarding the poor social outcome in 2 of them. Thus social assessments and information regarding the outcome for the child were available in 14 cases and assessments of clinical outcome in 12 cases.

A good social outcome was found in only 3 cases, 1 of whom was the patient whose psychosis was based upon Cushing's syndrome. The numbers are thus too small for statistical analysis. The remaining 2 patients with a good social outcome were aged 31 and 34 and both came from social class II. The time between confinement and follow-up in these 2 cases was less than in the sample as a whole. One woman was a primigravida with no previous psychiatric history. Her index illness was diagnosed clinically as an acute schizophrenic episode the PSE classification being NS+. The other patient had a 3 year old child, after whose birth she had had a severe psychotic illness necessitating 5 months of inpatient care in another hospital. That illness was diagnosed as a schizoaffective psychosis which was the clinical diagnosis made of the index illness, the PSE classification being NSPD. This was the patient whose baby died of congenital heart disease. Both of these women had acute very florid psychotic illnesses, characterized by widespread misperceptions, Schneiderian first rank symptoms, paranoid delusions, and fluctuating affective change but this was also true of many of those with a poor social outcome. Clinical assessments at follow-up were available in 12 women, one of whom was the patient with Cushing's syndrome. Six of the remaining 11 had psychotic symptoms at follow-up while 5 had affective symptoms. The findings in the two groups are shown in Table II.

Again the numbers are really too small for statistical analysis but it is clear that age and past psychiatric history and initial PSE classification have no obvious relationship with clinical outcome. Although social class appears to be associated with persistent schizophrenic symptoms it is likely that the three patients in social class V are so placed because of their schizophrenic symptoms rather than vice versa as they had

TABLE II  
*Comparison of puerperal schizophrenic patients with and without schizophrenic features at late follow-up*

PSE classification at follow-up	Previous psychiatric history	Weeks between confinement and follow-up	Age in years	Social class	Initial PSE classification	Initial ICD classification
Schizophrenia psychosis (6 cases)	2 × nil 1 × uncertain 1 × neurotic 1 × schiz. episode post abortion 1 × multiple schiz. episodes puerperal and non-puerperal	103.3 SD 67.2	26.6 ± 5.8	2 × 3 1 × 4 3 × 5	2 × NS+ 1 × DS+ 1 × DP+ 1 × DP/AP? 1 × NS/DS-MN	1 catatonic schizophrenic 1 residual schizophrenic 1 schizoaffective 3 paranoid schizophrenic
Affective (5 cases)	2 × nil 1 × neurotic 1 × affective (non-puerperal) 1 × schizoaffective (puerperal)	147.4 SD 103.99	28.6 ± 3.78	2 × 2 3 × 3	2 × NS+ 1 × DS+ 1 × NSPD 1 × UP?/PD+	1 × mixed affective psychosis 1 × acute schiz. episode 1 × schizoaffective 1 × M/D depressed 1 × paranoid schizophrenic

*Key to the PSE classification used in Tables I and II:*

NS	nuclear schizophrenia	XN	residual neurosis
DS	schizophrenia without first rank symptoms	NO	no abnormality
DP	paranoid psychosis	NSPD	nuclear schizophrenia combined with psychotic depression—nuclear schizophrenia predominant
AP	affective psychosis	DP/AP	paranoid psychosis combined with affective psychosis—paranoid psychosis predominant
UP	possible borderline psychosis	UP?/PD	possible borderline psychosis combined with psychotic depression—possible borderline psychosis predominant
MN	mania	NS/PDMN	nuclear schizophrenia combined with psychotic depression and mania—nuclear schizophrenia predominant
HM	hypomania		
PD	psychotic depression		
ND	neurotic depression		
SD	simple depression		
AN	anxiety neurosis		
ON	obsessional neurosis		

drifted down the social scale probably as a result of their condition (Goldberg and Morrison, 1963) their fathers being in social classes II and III. Less time had elapsed between confinement and follow-up in those with schizophrenic symptoms and this may be relevant. The initial ICD classification suggests a relationship between an affective component in the index illness and affective rather than schizophrenic symptoms at follow-up but this is not clear cut.

The progress at follow-up of the children of these women was as follows. Many of the problems regarding the children arose here. Both of the dead babies were from this group. Although one death was from congenital heart disease the second death was clearly related to the mother's disturbed mental state. This patient had paranoid schizophrenia and although much worse following confinement had been unwell during the pregnancy, refused medical attention and insisted upon a home delivery. Her twin pregnancy was undiagnosed and the death of the second twin was

considered to be due to the circumstances of the birth. The surviving twin became ill because of the mother's belief that food was poisoned. The other baby whose health was impaired by neglect was the child of a woman with persisting psychotic symptoms and multiple previous schizophrenic episodes whose behaviour was so disorganized that she could not give her child adequate care. As a result of this he had to be admitted to hospital on several occasions because of failure to thrive, and gastroenteritis. Both of these women had past histories which suggested that these difficulties might be going to occur and they received very close supervision. This did not prevent the children from becoming ill but it meant that they received prompt treatment.

Three of the children suffering deliberate injury came from this group. One woman, while an in-patient, put a polythene bag over her baby's head and attempted to strangle her manually. She was a primigravida with no past history and was categorized

NS on PSE and paranoid schizophrenia on ICD. Her illness was very similar to that of a number of other women in this group, apart from the fact that she later killed herself. A second woman, while in a day nursery with her child was with difficulty restrained from stabbing the baby with a vegetable knife. She was categorized as NS/DS—MN on PSE and paranoid schizophrenia on ICD. She had had a previous schizophrenic illness following a termination of pregnancy (vide infra) and during this had burned the genitals of her one year old daughter with a lighted cigarette. The possibility of an injury was therefore anticipated and it was for this reason that she was attending the day nursery where the incident took place. A third woman, a primigravida with no previous history, categorized by PSE as UP?/PD+ and given an ICD diagnosis of manic depressive psychosis depressed, threw her child on the floor. Later there were two further injuries which were said to be accidental. Seven of the children who were not cared for by their mothers were in this group. In 2 cases the mothers were dead. The child who had had repeated hospitalizations for gastroenteritis and failure to thrive resulting from his mother's neglect, and the two children of living women described above who had tried to injure them, were in the care of the local authority. The two remaining children not cared for by their mothers were looked after by their grandparents. This was not a short-term arrangement to cover the mother's absence while in hospital. At the time of follow-up the babies were 56 and 72 weeks old. Both mothers had become ill shortly after confinement and had been inpatients much of the time thereafter. Both were primigravidae initially admitted to other hospitals and transferred to our care after some months. Their inability to cope with their children was a constant feature which persists in both of them at the time of writing six months after completion of the follow-up, so that one patient has given up her own home and has gone with her husband and child to live at her mother's house so that her mother can help with the child. The other patient remains in hospital. Persistent attempts to re-unite her with her child have failed. Neither woman had any previous psychotic history. One was categorized as NS+ (PSE) and paranoid schizophrenia (ICD) and the other as DP/AP? (PSE) and catatonic schizophrenia (ICD). Six of the incidents of maternal self injury which did not end in death occurred in this group.

Thus an initial diagnosis of schizophrenia was associated with a poor outcome in all of the terms considered. At follow-up only 1 of 17 women who had a schizophrenic illness with no clear organic basis was herself alive with a live baby that she had never harmed, no social impairment and no schizophrenic

features. In this small sample it was not possible to determine factors which predisposed to the various serious difficulties with which this diagnostic category was associated.

#### (b) *Affective*

There were 22 episodes of illness in 21 women. Complete follow-up was conducted in all cases. A good social outcome was found in 15 cases and a poor social outcome in 6. All of those with a poor outcome had depressive illness (5 PD and 1 SD on PSE; 4 manic/depressive (depressed) and 2 depressive neurosis on ICD). There were no clinical features which distinguished the illnesses of these women from those with a good social outcome. They tended to be slightly older than the sample as a whole (mean age  $32.3 \pm 4.6$  years), 1 was from social class I, 4 from social class II and 1 from social class V. Although the mean length of time between confinement and follow-up was the same in those with a good outcome, this is due to the fact that two patients with poor social function became ill in the earliest year considered. In fact three of the patients in this group were followed up within 28 weeks of confinement and it is clearly likely that improvement would still be going to take place. On the other hand the remaining three ladies continued to be socially impaired years after their puerperal affective illness. Two of them were, however, asymptomatic on PSE at follow-up.

Although affective and neurotic symptoms were common at follow-up (Table I) in the majority of instances these did not affect the patients' social functioning. The progress at follow-up of the children of the patients in this group was as follows: All of the children of the women with affective illness were alive, well and living with their mothers at follow-up, although two of the cases of non-accidental injury occurred in this group. One woman (a) put her baby in a polythene bag (b) laid him in the snow and (c) removed his clothes and put him beside an open window on a winter's night. The child survived although attempt (a) caused him to be admitted to hospital with respiratory difficulty which was erroneously attributed to virus infection. The second woman slapped her baby a number of times causing obvious bruises to the child's face.

Three of the incidents of maternal self injury occurred in this group. Thus affective illness was associated with dangerous behaviour in 5 cases. One of the women who harmed herself did so in the light of self depreciatory delusions but the other women exhibiting dangerous behaviour showed no evidence of delusions and apart from this behaviour did not appear to be any more severely ill than the others. The outcome in this group was clearly more successful than

that of the schizophrenic patients but continued impairment of function and serious risks to life were still found.

(c) *Neurotic*

The small numbers in this group make evaluation difficult. All 4 patients were available for assessment. There were no apparent relationships between social or clinical outcome and any of the factors considered initially. One of the incidents of maternal self-harm occurred in this group but none of the incidents of injury to the children.

(d) *Other*

One of these women was admitted for re-stabilization on lithium following confinement because of a history of repeated severe episodes of affective illness. Although she was an inpatient for 10 days she never became ill and at follow-up was socially unimpaired and felt well although classified as HM on PSE. The second woman denied all symptoms and thus also showed no abnormality on PSE. She was referred by the social services because of her aggressive behaviour towards her child. She repeatedly struck her child and threw him into his cot causing substantial bruising. This was her main abnormality and the diagnosis of explosive personality disorder was made. At follow-up her aggressive and unpredictable behaviour towards her son persisted and he had been taken into the care of the social services.

*Cases which followed termination of pregnancy*

There were three such cases. Two illnesses were schizophrenic (NS+ and DS+) and the other manic. The manic illness developed less than one week following termination in a lady who had had manic illnesses following each of her three previous confinements. She recovered satisfactorily and at follow-up was clinically well and socially unimpaired. One patient was admitted six weeks after termination of pregnancy with an acute first schizophrenic illness. At follow-up this patient had no schizophrenic features but was markedly socially impaired and was unable to look after her three year old child who was being cared for by social services. The first evidence of psychiatric disturbance in the third patient was an incident in which she burned her daughter with a cigarette. This took place six weeks after a termination of pregnancy and some weeks later it became evident that this patient had florid schizophrenic features. She made a reasonable recovery from this illness but soon became pregnant again and within two weeks of confinement developed acute schizophrenic features once more. This illness has been described above.

### Discussion

The findings of this study indicate that puerperal psychiatric illness may be very serious and is often associated with lasting impairment of function. This gloomy picture is not entirely consistent with the findings of others. Protheroe (1969) found a good outcome in 74 per cent of cases but was able to interview only 63 per cent of the sample. In the present study 98 per cent of the patients were traced and 87 per cent were interviewed by the authors themselves. There was a discrepancy between the patient's own view of her condition and that of the authors in that some patients who had florid psychotic symptoms and others who showed evidence of social impairment regarded themselves as being well. It may be that such a discrepancy underlies the difference between the present findings and those where some of the follow-up assessments are made by questionnaire, such as that of Martin (1958).

The length of the follow-up in the present study is variable and is very much less than that of Protheroe's (1969) study. It is likely that more of the patients will recover in time, as follow-up took place within less than one year of the confinement in seven cases and the mean duration of the illness even in those patients did recover was longer than this. Furthermore it is known that the psychiatric morbidity among women with pre-school children is higher than that of other age groups (Brown *et al*, 1975; Richman, 1976) and on commonsense grounds it would be reasonable to expect that some of the patients would show a higher standard of social functioning if their children were older and their domestic responsibilities less.

Nevertheless, the outcome in both social and clinical terms was far from satisfactory in many cases. It would appear that few of the factors that we considered can be used to predict outcome. With regard to outcome in social and clinical terms the main predictor of a poor outcome was a schizophrenic diagnosis of the presenting illness. It has been argued (Brockington *et al*, 1978) that puerperal psychosis is an entity separate from either manic depressive or schizophrenic psychoses in that it shows a mixture of psychotic features, and has a rather more benign outcome than schizophrenia. The present findings cannot be used to examine the question of frequency of a mixed schizophrenic and affective picture in puerperal cases as the application of the catego program to the results of the Present State Examination means that the presence of schizophrenic symptoms will over-ride other clinical features and a schizophrenic diagnosis will be given (Wing *et al*, 1974). A poor outcome was one of the defining features which Kraepelin (1919) used when he described the syndrome which later came to be known as schizophrenia. This poor out-

come has continued to be used as a validating criterion for the diagnosis (Kendell *et al*, 1979).

The significant association between poor outcome and a schizophrenic diagnosis at the time of the index episode would tend to support the idea that such illnesses even although they arise at this time are schizophrenic. If this is accepted it appears from this sample that childbirth is a very potent predisposing factor for the development of schizophrenic illness in certain subjects, as the temporal relationship between confinement and the onset of symptoms in many of the patients is very close. Follow-up studies of schizophrenia do not always indicate as poor a prognosis as we found for the schizophrenic patients in this study (Hawk *et al*, 1975; Strauss and Carpenter, 1977; WHO, 1979) and the question that childbirth may be associated with a particularly malignant form of the disorder has to be considered.

Because of variability in inclusion criteria, methods used etc it is not always possible to compare outcome studies but the instruments used in an earlier study of the outcome of schizophrenia after one year conducted in this department (Johnstone *et al*, 1979) were very similar. In this study of 35 patients (19 men; 16 women) 15 had a good and 21 a poor social outcome. There were 8 women in each group and 6 of the 8 women with a good social outcome showed no or minimal clinical abnormality. In comparison therefore, the puerperal women in the present study did badly. While this could imply that puerperal schizophrenia is more severe than non-puerperal, an alternative explanation is possible as outcome particularly in social terms must depend upon the standard of function required, and this is not the same in puerperal and non-puerperal women. None of the women in the good outcome group in the earlier study had young children and some of them led rather protected lives. There is no means of knowing how well they would have functioned in more stressful circumstances.

Many of the patients had neurotic and affective symptoms at follow-up. Such symptoms are common in the general population (Goldberg *et al*, 1976) and they are especially common in young women with small children (Brown *et al*, 1975; Richman, 1976). Apart from the schizophrenic patients mentioned above we have no control group of non-puerperal cases and it is difficult to assess the significance of this finding but it may certainly be said that it is unusual for patients who have had a serious puerperal psychiatric illness within the last 1-6 years to become asymptomatic.

It has previously been shown that serious psychiatric illness following termination of pregnancy is uncommon (Pare and Raven, 1970; Brewer, 1978) but in

the three cases described here the psychiatric disturbances following termination were certainly severe. While it is not impossible that the terminations and the psychoses were unrelated the temporal relationships between the two were close. Moreover, two of the women suffered similar psychotic illnesses following successful pregnancies, thus illustrating the association between puerperal psychosis and post-abortion psychosis referred to by Sim (1963).

The findings of this study show that puerperal psychiatric illness requiring ongoing care is not rare. These disorders were often severe in that many showed very florid psychotic features and in general, despite continued treatment, were of relatively long duration. Social impairment was common and in about 20 per cent of cases the mothers were unable to care for their children because of psychiatric illness. The disorders were associated with incidents of self harm, of injury to the children and with death of both mothers and children. Thus it must be concluded that in some cases of puerperal psychiatric illness the prognosis, however it is assessed, will be very poor.

#### Acknowledgements

The authors would like to thank the patients, their relatives and their general practitioners for their co-operation in this study and they are grateful to Dr T. J. Crow, Mr I. R. McFadyen and Miss F. A. Page for advice and to Miss Anjala Kapoor for typing the manuscript. This study was carried out under the auspices of the Ethical Committee of Northwick Park Hospital and was conducted according to its rules.

#### References

- BREWER, C. (1978) Post-abortion psychosis. In *Mental Illness in Pregnancy and the Puerperium* (ed. M. Sandler). Oxford: Oxford University Press.
- BROCKINGTON, I. F., SCHOFIELD, E. M., DONNELLY, P. & HYDE, C. (1978) A clinical study of post partum psychosis. In *Mental Illness in Pregnancy and the Puerperium* (ed. M. Sandler). Oxford: Oxford University Press.
- BROWN, G. W., BHROLCHAÍN, M. NÍ. & HARRIS, T. O. (1975) Social class and psychiatric disturbance among women in an urban population. *Sociology*, **9**, 225-54.
- COOPER, B. (1961) Social class and prognosis in schizophrenia: Part II. *British Journal of Social and Preventive Medicine*, **15**, 31-41.
- GOLDBERG, D. P., KAY, C. & THOMPSON, L. (1976) Psychiatric morbidity in general practice and the community. *Psychological Medicine*, **6**, 565-9.
- GOLDBERG, E. M. & MORRISON, S. L. (1963) Schizophrenia and social class. *British Journal of Psychiatry*, **109**, 785-802.
- HAWK, A. B., CARPENTER, W. T. & STRAUSS, S. (1975) Diagnostic criteria and five-year outcome in schizophrenia. *Archives of General Psychiatry*, **32**, 343-7.



- HEMPHILL, R. E. (1952) Incidence and nature of puerperal psychiatric illness. *British Medical Journal*, *2*, 1232-5.
- JOHNSTONE, E. C., FRITH, C. D., GOLD, A. & STEVENS, M. (1979) The outcome of severe acute schizophrenic illnesses after one year. *British Journal of Psychiatry*, *134*, 28-33.
- KENDELL, R. E., BROCKINGTON, I. F. & LEFF, J. P. (1979) Prognostic implications of six alternative definitions of schizophrenia. *Archives of General Psychiatry*, *36*, 25-31.
- KRAEPELIN, E. (1919) *Dementia Praecox and Paraphrenia*. Translated by Mary Barclay and G. M. Robertson. Pp 181-185. Facsimile edition published by Krieger, New York (1971).
- KUMAR, R. & ROBSON, K. (1978) Neurotic disturbance during pregnancy and the puerperium: Preliminary report of a prospective survey of 119 primiparae. In *Mental Illness in Pregnancy and the Puerperium* (ed. M. Sandler). Oxford: Oxford University Press.
- MARTIN, M. E. (1958) Puerperal mental illness. A follow-up study of 75 cases. *British Medical Journal*, *2*, 773-7.
- PARE, C. M. B. & RAVEN, H. (1970) Follow-up of patients referred for termination of pregnancy. *Lancet*, *i*, 635-8.
- PAYKEL, E. S., EMMS, E. M., FLETCHER, J. & RASSABY, E. S. (1980) Life events and social support in puerperal depression. *British Journal of Psychiatry*, *136*, 339-46.
- PROTHEROE, C. (1969) Puerperal psychoses: A long term study 1929-1961. *British Journal of Psychiatry*, *115*, 9-30.
- RICHMAN, N. (1976) Depression in mothers of pre-school children. *Journal of Child Psychology and Psychiatry*, *17*, 75-8.
- SIM, M. (1963) Abortion and the psychiatrist. *British Medical Journal*, *ii*, 145-8.
- STRAUSS, J. S. & CARPENTER, W. T. (1977) Prediction of outcome in schizophrenia. *Archives of General Psychiatry*, *34*, 159-63.
- WING, J. K., COOPER, J. E. & SARTORIUS, N. (1974) *The Measurement and Classification of Psychiatric Symptoms*. Cambridge: Cambridge University Press.
- WORLD HEALTH ORGANISATION (1978) *Mental disorders: glossary and guide to their classification in accordance with the ninth revision of the international classification of diseases*. Geneva.
- (1979) *Schizophrenia: An International Follow-up Study*. Chichester: John Wiley.

Lalitha da Silva, M.B., M.R.C.Psych., *Senior Registrar in Psychiatry, St George's Hospital, London SW17 and St Peter's Hospital, Chertsey, Surrey*  
*Formerly Registrar in Psychiatry, Northwick Park Hospital and Clinical Research Centre, Watford Road, Harrow*

Eve C. Johnstone, M.D., M.R.C.P., M.R.C.Psych., *Honorary Consultant Psychiatrist, Northwick Park Hospital and Clinical Research Centre, Watford Road, Harrow*

(Received 16 December 1980; revised 24 April 1981)