

# DEPRESSION IN LATE LIFE

R.Y.L. CHEN, S.Y. LI, & C.S. YU

## SUMMARY

In view of the growing elderly population in Hong Kong, much emphasis should be paid to the medical service and social welfare for the elderly. Depression is not only a common problem but also causes a great deal of morbidity or even mortality in this age group. In this review, the authors would like to address this issue with reference to its epidemiology, clinical presentation, aetiology, prognosis and treatment.

**Keywords:** review, depression, elderly

## INTRODUCTION

In the recent few decades, there has been a rapid increase in the elderly population in Hong Kong. In 1965, there was 130,900 people older than 65 in a general population of 3.6 million. It composed 3.6% of the total population. However, in 1992, the elderly population raised up to 519,800 in a total population of 5.8 million. The proportion increased to 8.9% (Lee 93). It would be certainly true to expect that the elderly population would rapidly increase in the future. Therefore the need of psychogeriatric service in Hong Kong is a matter of urgency.

Depression is not only a common symptom in the elderly, it can also be a major psychiatric disease in this age group. However it was found to be easily misdiagnosed or undertreated (NIH Consensus Development Panel 1992). If they are not properly treated, it would result in a great deal of morbidity or even mortality. Therefore, clinical awareness of elderly depression is mandatory among the health care professionals. In this review we will discuss recent data on the epidemiology, symptomatology, causes, treatment & the outcome of elderly depression.

## EPIDEMIOLOGY

For major depression which satisfied the DSM-III-R criteria, the prevalence rate in the community was found to be 1% (Blazer 1989). Another study showed 1-2% persons living in the community had major depression while 2% had dysthymia or neurotic depression (Blazer, 1987).

On the other hand, the subsyndromal depression had prevalence rate of 8-15% in the community (Blazer 1989). Higher figures were found in people living in institutions. It was found that 15-25% of the nursing home residents had major or minor depression (NIH Consensus Development Panel 1992). There was 13% of new case & 18% of new depressive symptoms in 1 year period in nursing homes. Therefore it is rather common for elderly patient to have depressive

symptoms but not the genuine depressive disorder when strict diagnostic criteria is applied. And yet the prevalence rate of major depression in elderly is lower than that in younger adult (Blazer 1987). There may be an increased prevalence among those aged 85 or above, but the current data are too limited for accurate estimates.

In Hong Kong, the prevalence of depression in elderly male and female was 29.2% and 41.1% respectively when they were screened by 15-items Chinese version of Geriatric Depression Scale with cut-off point at 8 (Woo et al 1993). An even higher figure of around 40% was found in our local elderly centres when a Chinese version of Geriatric Depression Scale (30-items) with lower cut-off point (equivalent to 6 on the 15-items version) was used to screen for depression (Yung 91). The high rate in Hong Kong could be explained by the biased samples and the use of different screening instrument or diagnostic criteria. Geriatric Depression Scale was designed specifically for elderly population. It has better discriminative power for depression because it excludes the somatic symptoms which are commonly found in the elderly with physical illness. As a research tools, it is easily administrated even by non-psychiatrists. A rather high false positive rate of 57.1% was noted with 11 as a cut off point in the 30 item version when applied to local people attending government psychiatric clinics in Hong Kong (Chan 94, personal communication). However, it serves as a screening tool that would also include those subsyndromal patients who do not satisfy the diagnostic criteria of depressive disorder in either ICD10 or DSMIII-R and further follow up studies are recommended.

Henderson & his colleagues (1993) in their study found that the point prevalence of depressive disorder as defined by draft ICD-10 diagnostic criteria was 3.3 % but it was 1.0% as defined by DSM-III-R. They concluded that draft ICD-10 has lower threshold in diagnosing elderly depression especially the mild one. In clinical practice, it would be better if elderly patient

with subsyndromal depression can be included in treatment programme in order to improve their quality of life and reduce their morbidity. ICD10 with its lower diagnostic threshold level might be better choice over DSM-III-R in clinical setting and DSM-III-R might have a better position in research work.

## SYMPTOMATOLOGY

The symptoms of depression in the elderly are found to be similar to those in younger adult (Caine et al 1993). It is probably due to the consistent application of same diagnostic criteria. Recently there is emphasis on the preponderance of biological symptoms such as anorexia, weight loss, sleep alteration & psychomotor disturbance, but less psychological manifestation such as expression of guilt & worthlessness. These diversity of symptoms can be explained by the heterogeneity in the aetiology of late life depression. The interaction among neurobio-logical, behavioural & psychosocial factors may constitute the aetiology of elderly depression. These heterogeneity has not been measured systematically & the various contributing factors have not been studied specifically. Moreover, medical illness is common in the elderly with depression. Generally, the major challenge for clinicians especially in non-psychiatric setting is to distinguish somatic signs of depression from those of other physical illnesses. More research work still needs to be done and the awareness of depression should be raised in every clinician treating elderly people.

## CAUSES

The causes of elderly depression has aroused active research. There is still no definitive answer to it. However, there are some common consensus based on the recent empirical research data. It is less likely to be due to pure genetic factor because it is usually apparent for the first time in earlier ages. Although the heterogeneous causes are conceptualised as an interaction of neurobiological, & psychosocial factors, it is considered to be more on the biological side. As it is illustrated by clinical experience that medical illness and drug used are prominent causes of elderly depression. Poor regulation of the hypothalamic-pituitary-adrenal axis & disruption of normal circadian rhythms are more common among the elderly than younger age groups. There are evidences of reduced monoamine transmitters such as serotonin, dopamine & nor-epinephrine (Alexopoulos et al 1988). Beta-adrenergic receptor binding sites was found to be reduced in the frontal cortex. It is considered to be central to the development of primary depression.

Recent studies showed that late onset depression point to greater structural abnormalities in the brain (Alexopoulos et al 1988). Patients commonly have more biological symptoms such as anorexia, insomnia, marked weight change & diurnal variation of mood which are less likely to be due to social or psychological factors, even though people experience more losses in

later life. It can be argued that those losses are expected & can be better tolerated as they have already gone through various stresses or losses at early ages (i.e. psychological immunity as proposed by Henderson 1972). The hypothesis of demoralization & despair sounds attractive but it lacks empirical data for support.

## PROGNOSIS

The prognosis of elderly depression is still subjected to much controversy. (Murphy, 1983,1987; Baldwin & Jolley, 1986; Cole, 1990). There are two main issues concerning about the studies of prognosis. Firstly, data on prognosis are derived from flawed research. Cole (1990) gave a comprehensive review of the subject & suggested ten recommendations to improve the quality of research data. Another issue is that it is essentially subjective to decide which is "good" or "bad" prognosis. It can be illustrated by the analysis of ten studies quoted by Cole (1990). An optimist would state that about 60% of elderly patients stayed well after recovery or could recover after one or two subsequent relapses, while only about 25% were continuously ill (Baldwin 1988, Cole 1990). However, a pessimist would say that after the first episode, there was only 20% staying free of the illness while 80% either continuously ill or suffered subsequent relapses.

In general, Millard (1983) opined that the rule of thirds can be applied: one-third get better, one-third stay the same, & one-third get worse. Brodaty (1993) showed that there was no significant difference in outcome between the younger & older depressed patients and the prognosis improved with times. There were 25% of the patients having a lasting recovery at the first follow-up one year after the index episode while there were 41% at the second follow-up 2 to 4 years later. He further demonstrate that early onset, recurrence, & poor premorbid personality were related to poor prognosis. Cole (1990) concluded that physical illness, cognitive impairment & severe depressive symptoms, but not social factors were frequently associated with poor prognosis. It was also found that remission of depressive symptoms could be predicted by improvement in health, sleep disturbance & added formal support service. (Kennedy et al, 1991). Relapse after recovery from major depression has been associated with a history of depressive episodes, recent stress, interpersonal stresses or lack of support, and persistent neuroendocrine dysregulation (Belsher & Costello, 1988). On the other hand, Hinrichsen & Hernandez (1993) in his study showed that no demographic or clinical characteristics of the patients were predictors of recovery or relapse, but family issues namely, poor mental & physical health of the family members & reported difficulty in caring of the patient, were important in relation to patients' status as not recovered at followed-up.

## TREATMENT

The approach to treatment of depression in the elderly runs in similar vein to that of depression in early adult life. It comprises: diagnosis, physical intervention and psychosocial management. However, in the recognition of depression, it has frequently been under diagnosed because of sub-syndromal symptoms (Blazer 1989), 60% of the elderly with depression are inappropriately treated or inadequately treated (NIH, 1992). However once diagnosed, it is as treatable as in the younger adult. Therapeutic objectives include decreasing symptoms of depression and decreasing likelihood of recurrent episode of illness. Other objective includes decreasing health care cost by reducing the treatment seeking behavior in the elderly during the depressing episode. An equally important objective should be the improvement of the quality of life and medical health status thereby increasing the ability of patients to function.

The diagnostic challenge facing the clinician includes physical comorbidity and psychosocial difficulties facing the elderly patients. The elderly may be reluctant to admit depressive symptoms believing such admission as a sign of weakness (Cutler, 1981). They are more likely to be suffering from physical illness and the in-take of numerous medications. They are also in the stage of their life when they might be experiencing more psychosocial difficulties such as the loss of loved-ones, loss of financial independence, loss of physical and social functions. This will increase the difficulties of a clinician in differentiating the physical symptoms of depression from that of physical illness. This is especially so in non-psychiatric setting such as in a geriatric medical liaison setting or when depressive symptom fails to meet syndromal criteria. Such sub-syndromal depression, although often not easily classified in DSM-III-R categories, may still be associated with considerable suffering and disability (Blazer, 1989). This diagnostic dilemma poses difficulties regarding whether treatment is necessary. Indeed, it requires further research into the issue. Another issue associated with the diagnostic process is the importance in the recognition of suicide potentials in the elderly as there is an increase in completed suicides in the elderly (Conwell, 1990). The physical management of depression in the elderly involves mainly the process of pharmacotherapy and the application of electroconvulsive therapy (ECT).

Concerning the pharmacotherapy, special consideration has to be taken in the pharmacokinetics of drugs and the physical make-up of the elderly as they are more prone to the side effects of medications including anti-cholinergic, cardiotoxic, renal side effects. Sometimes constipation, dry mouth, urinary retention, hypotension and sedation can be particularly disturbing to the elderly (Robinson 1979, Salzman 1982a, 1983). The less sedative and expensive nortriptyline is reported by

Reynolds et al (1992) to bring about a remission rates of 70-80% in medically complicated recurrent unipolar patients aged 60-80 years by requiring that patients be maintained in the 80-120 ng/ml therapeutic window. Drugs such as selective serotonin reuptake inhibitor (SSRI) e.g. fluoxetine, sertraline or paroxetine are marketed for less side effect profile with same efficacy. Occasional reports of side effects such as anorexia (Brymer, 1992), hypo-tension, apathy (Hoehn-Saric, 1990), inappropriate anti-diuretic hormone secretion (Cohen 1990, Miller 1993) and extrapyramidal side effect (Baldwin 1991, Steur 1993) are reported for these new drugs. Special attention needs to be made to Fluoxetine because it is widely used in treating depression nowadays. It would easily accumulate to an undesirable high level in the body because of its long half-life (2 to 3 days) and the extended half-life (7 to 15 days) of its metabolite. Moreover, even at low recommended starting dose (i.e. 20mg), many elderly patient could not tolerate its side effect e.g. nervousness, dizziness, nausea and gastrointestinal discomfort. Hence it is less commonly used in the elderly population. From the preliminary data, sertraline shows more desirable clinical profile (Cohn et al, 1990). It has a half-life of 24 to 26 hours with peak plasma level achieved about 6 to 8 hours after oral administration. It lacks sedative effect that does not impair cognitive function. Paroxetine was found to have comparable efficacy to fluoxetine and had similar tolerability in treating elderly depressed patient, but it was shown to have earlier onset of therapeutic effect (Geretsegger et al, 1994). Further clinical data is needed before definite conclusion can be made. Other newer drugs such as Reversible Inhibitor of Mono-amine Oxidase A-Type (RIMA) e.g. moclobemide and brofaromine have been tried. These reversibly inhibited type A monoamine oxidase so that it avoids the risk of dangerous tyramine-type adverse interactions. Stahl et al (1989) reviewed that moclobemide was as effective as tricyclic anti-depressants in treating neurotic/reactive depression and also endogenous major depression. It was better tolerated with less undesirable side effects as compared with tricyclic antidepressants. These newer drugs possess the potentials of further exploration in their use. Although these drugs would have less undesirable side effect, their cost are much higher than the classical antidepressants. Therefore, clinician should balance the cost-effectiveness in a particular clinical situation before they are prescribed.

The use of lithium (Davis 1975, Van der Velde 1971) has its place in the treatment of resistant depression and the prevention of its relapse. However, the side effects of its use are particularly dangerous such as renal and neurological toxicity due to reduced renal clearance and often interaction with diuretics.

In the prevention of relapse, study has suggested that patients be put on medication longer than the time

required for the resolution of acute symptom, although more research is needed to define appropriate parameters of duration and intensity of maintenance therapy in late life depression (OADIG 1993).

The use of ECT in elderly is appropriate in emergency situation because of its swiftness in therapeutic effect and the relative lack of contra-indications except raised intracranial pressure. It is especially useful when the patients are highly suicidal or refusing food and water so much so that their life is endangered. ECT can be a means to avert this dire situation (Salzman 1982b). Its use is also frequently employed when depression is resistant to medication treatment

Psychological treatment of depression in the elderly is similar to that employed in adults. However, it might be more important and useful as it is inferred from studies that the elderly suffering from depression are associated with more psychosocial factors in the precipitation and relapse and the maintenance of the depressive illness. The further development of cognitive science (Tessdale 1993) in conjunction with cognitive therapy and its application might be a useful application in the psychological treatment of the elderly.

## CONCLUSIONS

Depression has been known from antiquity. It is not an uncommon condition even in late life. The disturbance of mood is often accompanied by related cognitive, psychomotor, psychophysiological and interpersonal difficulties. Elderly may also have higher prevalence of co-existing physical illness which complicate the clinical picture. The situation in elderly is as severe as the younger patients but often overlooked and undertreated. The causes for the disorder may include biological factors interacting with the psychosocial factors. The modern classification of these disorders includes DSM system and ICD system. There is now a variety of effective treatment for the sufferers. Treatment for elderly patient with depression should involve the biopsychosocial fronts and should be vigorous to obtain the optimal results. The availability of many safer antidepressants with less side effects are a blessing to the elderly patients who might not tolerate the first generation antidepressants so well.

## REFERENCES

- Alexopoulos, G.S., Young, R.C. and Meyers, B.S.(1988) Late-onset depression. **Psychiatric Clinic of North America**, **11** (1), 101-115.
- Baldwin, R. and Jolley, D. (1986) The prognosis of depression in old age. **British Journal of Psychiatry**, **149**, 574-583.
- Baldwin, R.(1988) Late life depression- undertreated? **British Medical Journal**, **296**, 519.
- Baldwin, D., Fineberg, N. and Montgomery, S. (1991) Fluoxetine, Fluvoxamine, and Extrapyramidal Tract Disorders. **International Clinic of Psychopharmacology**, **6**, 51-58.
- Belsher, G., and Costello, C.G. (1988) Relapse after recovery from unipolar depression: a critical review. **Psychological Bulletin**, **104**, 84-96.
- Blazer, D.G., Hughes, D.C. and George, L.K.(1987) The epidemiology of depression in an elderly community population. **Gerontologist**, **27**, 281-287.
- Blazer, D.G.(1989) Affective disorders in late life. In **Geriatric Psychiatry**. Edited by Busses, E.W., Blazer, D.G. Washington D.C.: American Psychiatric Press, 369-401.
- Brodsky, H., Harris, L., Peters, K., Wilhelm, K., Hickie, I., Boyce, P., Mitchell, P., Parker, G. and Eysers, K.(1993) Prognosis of depression in the elderly: A comparison with younger patients. **British Journal of Psychiatry**, **163**, 589-596.
- Brymer, C. and Winograd, C. (1992) Fluoxetine in Elderly Patients: Is there a Cause for Concern? **Journal of American Geriatric Society**, **40**, 902-905.
- Caine, E.D., Lyness, J.M. and King, D.A. (1993) Reconsidering depression in the elderly. **American Journal of Geriatric Psychiatry**, **1**, 4-20.
- Chan, A C (1994) Clinical Validation of the Geriatric Depression Scale (GDS) Chinese Version : Preliminary Results (personal communication).
- Cohen, B.J., Mahelsky, M. and Adler, L. (1990) More Cases of SIADH with Fluoxetine. **American Journal of Psychiatry**, **147**, 948-949.
- Cohn, C.K., Shrivastava, R. and Mendels, J. (1990) Double-blind, multicenter comparison of sertraline and amitriptyline in elderly depressed patients. **Journal of Clinical Psychiatry** **51(Suppl B)** 28-33.
- Cole, M.G.(1990) The prognosis of depression in the elderly. **Canadian Medical Association Journal**, **143**, 633-639.
- Conwell, Y., Rotenberg, M. and Caine, E.D. (1990). Completed Suicide at Age 50 and Older. **Journal of American Geriatric Society**, **38**, 640-644.
- Cutler, N.R., Zavadil, A.P. and Eisdorfer, C. (1981) Concentrations of desipramine in elderly women. **American Journal of Psychiatry**, **138**,1235-1237.
- Davis, J.M. (1975) Clinical problems in treating the aged with psychotropic drugs, in Eisdorfer C, Fann WE (eds): **Psychopharmacology and Aging**. New York, Plenum, pp 111-125.
- Geretsegger, C., Bohmer, F., Ludwig, M. (1994) Paroxetine in the elderly depressed patient: randomized comparison with fluoxetine of efficacy, cognitive and behavioural effect. **International Clinical Psychopharmacology**, **9**, 25-29.
- Henderson, A.S., Montgomery, I.M. and Williams, C.L. (1972) Psychological immunization: a proposal for preventive psychiatry. **Lancet** **ii**, 1111-1113.
- Henderson, A.S., Jorm, A.F., Mackinnon, A., Christensen, H., Scott, L.R., Korten, A.E. and Doyle, C. (1993) The prevalence of depressive disorders and the distribution of depressive symptoms in late life: a survey using Draft ICD-10 and DSM-III-R. **Psychological Medicine**, **23**, 719-729.
- Hinrichsen, G.A. and Hernandez, A.(1993) Factors associated with recovery from and relapse into major depressive

- disorder in the elderly. **American Journal of Psychiatry**, **150**, 1820-1825.
- Hoehn-Saric, R., Lipsey, J.R. and Mcleod, D.R. (1990) Apathy and Indifference in Patients on Fluvoxamine and Fluoxetine. **Journal of Clinical Psychopharmacology**, **10**, 343-345.
- Kennedy, G.J., Kelman, H.R. and Thomas, C.(1991) Persistence and remission of depressive symptoms in late life. **American Journal of Psychiatry**, **148**, 174-178.
- Lee, S.H.(1993) **Annual report 1992/93**, Department of Health. Hong Kong Government.
- Millard, P.(1983) Depression in old age. **British Medical Journal**, **267**, 375-376.
- Miller, L.G. (1993) Fluoxetine-Induced SIADH: A Geriatric Occurrence? **Journal of Family Practitioner**, **36**, 341-343.
- Murphy, E.(1983) The prognosis of depression in old age. **British Journal of Psychiatry**, **142**, 111-119.
- Murphy, E., (1987) The prognosis of depression in old age. **British Journal of Psychiatry**, **150**, 268.
- NIH Consensus Development Panel (1992) Diagnosis and treatment of depression in late life. **Journal of American Medical Association**, **268**, 1018-1024.
- Old Age Depression Interest Group (1993) How Long Should the Elderly take Antidepressants? A Double-Blind, Placebo-Controlled Study of Continuation/Prophylaxis Therapy with Dothiepin. **British Journal of Psychiatry**, **162**,175-182.
- Reynolds, C.F., Frank, E., Perel, J.M., Imber, S.I., Cornes, C., Morycz, R.K., Mazumdar, S., Miller, M.D., Pollock, B.G., Rifai, A.H., Stack, J.A., George, C.J., Houck, P.R. and Kupfer, D.J. (1992) Combined Pharmacotherapy and Psychotherapy in the Acute and Continuation Treatment of Elderly Patients with Recurrent Major Depression: A Preliminary Report. **American Journal of Psychiatry**, **149**,1687-1692.
- Robinson, D.S. (1979) Age-related factors affecting antidepressant drug metabolism and clinical response, in Nandy K (ed): **Geriatric Psychopharmacology**. New York: Elsevier/North Holland, pp 17-30.
- Salzman, C. (1982a) Key concepts in geriatric psychopharmacology: Altered pharmacokinetics and polypharmacy. **Psychiatric Clinic of North America**, **5**, 181-190.
- Salzman, C. (1982b) Electroconvulsive therapy in the elderly patient. **Psychiatric Clinic of North America**, **5**, 191-197.
- Salzman, C. (1983) Depression and physical disease, in Crook, T., Cohen, G.D. (eds): **Physician's Guide to the Diagnosis and Treatment of Depression in the Elderly**. New Canaan: Powley, pp 1-8.
- Stabl, M., Biziere, K., Schmid-Burgk, W., and Amrein, R. (1989) Review of comparative clinical trials. Moclobemide against tricyclic antidepressants and against placebo in depressive states. **Journal of Neural Transmission**, (Suppl), **28**, 77-89.
- Stein, E. (1993) Increase of Parkinson Disability after Fluoxetine Medication. **Neurology**, **43**, 211-213.
- Teasdale, J.D. (1993) Emotion and Two Kinds of Meaning: Cognitive Therapy and Applied Cognitive Science. **Behavioural Research and Therapy**, **31**, 339-354.
- Van der Velde, C.L. (1971) Toxicity of Lithium carbonate in elderly patients. **American Journal of Psychiatry**, **127**, 1075-1077.
- Woo, J., Ho, S.C., Lau, J., Yuen, Y.K., Chiu, H., Lee, H.C., and Chi, I. (1993) The prevalence of depressive symptoms and predisposing factors in an elderly Chinese population. **Acta Psychiatrica Scandinavica**, **89**, 8-13.
- Yung, P.M.B., Lau, B.W.K. and Lai, Y.K.(1991) Depression in late life-the oblivion. **Hong Kong Practitioner**, **13**, 1659-1663.

\*Chen Yuk Lun, Ronald BSc (Biomed), MBBS Lecturer, Department of Psychiatry, University of Hong Kong.  
 Li Seung Yau, Derek MBBS(NSW), MRCPsych, FHKAM(Psychiatry) Senior Medical Officer, Psychogeriatric Team, Kwai Chung Hospital.  
 Yu Chi Shing, Edwin MBBS, MRCPsych, FHKAM(Psychiatry) Chief of Service, Consultant, Psychogeriatric team, Kwai Chung Hospital.

\*Correspondence: Dr. Ronald Chen, Department of Psychiatry, Queen Mary Hospital, Pokfulam, Hong Kong.