SUMMARY AND CONCLUSION .

Schizophrenia is a major psychiatric disturbances of unkown cause that results in severe and prolonged mental disturbances . It can be delineated as a group of characteristic symptoms in the areas of thought (Delusions , passivity experiences and incoherence) , perception (hallucinations) , affect (flat or inappropriate) and motor activity (catatonia) .

The cause of schizophrenia may be due to genetic and enviromental factors or dopamine overproduction , so , antipsychotics (dopamine antagonist) are effective , and dopamine agonists worsened the patients .

The drug treatment can eleminate or reduce symptoms of schizophrenia , but psychological , vocational and social therapies are most effective in facilitating day-to-day coping and improving long-term outcome of the schizophrenic disorder . Neuroleptic drug therapy is the effective component therapy for schizophrenic disorders , propranolol has been said to produce response in schizophrenic patients but much controversy were developed .

It was interesting to investigate whether or not beta-blockrs have an antipsychotic action and to detect their effects is a receptor - subtype dependence . The present work was designed to investigate the antipsychotic effect of propranolol - a nonselective beta adrenergic blocker - and metoprolol - a cardioselective beta adrenergic blocker - . These drugs were compared separately with chlorpromazine in an schizophrenic mice model induced by single dose of amphetamine injection , aggressive mice model induced by foot-shock electric stimulation and another model induced by isolation of mice in a separate cage . Also , the effectiveness of combined administration of each of the used beta blockers with chlorpromazine were tested .

Drugs were administered in different doses and at different times before and after development of schizophrenic mice behaviour to be served as a prophylactic and curative treatment .

Effect of drugs on motor behaviour of schizophrenic mice model were recorded by close obsevation every 10 min. for the first hour then every 30 min. for 3 hours after amphetamine injection and the developed behaviour score compared statistically with behaviour score of the control mice group for the significance by Chi Square and student "t" test .

Another objective in the present work is that the tested drugs were administered in different doses for the second model of foot-shock and the third model of isolation , then the number of fighting episodes occured were recorded at 30 , 60 & 90 min. after injection and compared with the control group (number of fighting episodes before drugs injection) and statistics were made for the significance by student "t" test .

It was showed that propranolol and metoprolol produced significant suppression of aggression and schizophrenic motor behaviour but less than chlorpromazine effect . Moreover , each of those beta blockers potentiate the chlorpromazine effect on aggressive behaviours . The possible mechanism of beta blocker action may be through blockade of serotonin receptors function , membrane stabilizing effect , dopamine receptors blocking activity or inhibiting dopamine synthesis in the central nervous system , reduction of the abnormally high level of noradrenaline in schizophrenic brain and lessen the anexiety which is the part of schizophrenic symptoms .

The possible mechanism for the potentiating effect of combined treatment by beta blockers with chlorpromazine may be

through reduction of the liver metabolism of neuroleptic drugs , hence increasing their brain level or through the effect of propranolol in abolishing or attenuating the reflex increase in dopamine production after dopamine receptor blockers .

In conclusion , it appears that propranolol and metoprolol have a pharmacological effect on schizophrenic symptomatology which is evident on suppression of aggression and fighting behaviours , but this effect does not compare favourably with conventional neuroleptics as a clinical agents . The finding in this study should be of interest to neuropharmacologists to point out the possibility that whether or not propranolol can be modified to produce a more effective antipsychotic effect without major neuroleptic side effects .