

# The effect of antipsychotics on regional cerebral blood flow and metabolism - clinical and experimental study.

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# 1987 Fiscal Year Final Research Report Summary

The effect of antipsychotics on regional cerebral blood flow and metabolim - clinical and experimetal study.

Research Project

## Project/Area Number

60570496

## Research Category

Grant-in-Aid for General Scientific Research (C)

## Allocation Type

Single-year Grants

## Research Field

Psychiatric science

## Research Institution

Toyama medical and pharmaceutical University (1986-1987)  
Kanazawa University (1985)

## Principal Investigator

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## Project Period (FY)

1985 - 1987

## Keywords

133Xe inhalation / regional cerebral blood flow / haloperidol / I-IMP / オートラジオグラフ

## Research Abstract

### 1. Clinical study

To study the effect of antipsychotics on cerebral blood flow, we examined regional cerebral blood flow (rCBF) using 133Xe inhalation technique in eleven patients (9 schizophrenics and 2 schizophreniform disorder; mean age, 22.9 years) before and about two weeks after medication. The measurements were also made with a two-week interval for ten normal volunteers without medication (mean age, 31.2 years). RCBF measurements showed good reproducibility in the normal controls. their mean hemispheric blood flow being between 49.8-51.4 ml/100g/min. RCBF in the patients after two-week's medication (haloperidol 2.25-6.0 mg/day or sulpiride 300mg/day) showed a statistically significant decrease in the left frontal and right temporo-parietal region

compared with that before treatment, but their mean hemispheric blood flow only showed a tendency to decrease. On the Brief Psychiatric Rating Scale, the score of suspiciousness has significantly decreased.

## 2. Experimental Study

The acute effect of antipsychotics on rCBF in 37 discrete regions of the rat brain was studied by the quantitative autoradiographic N-isopropyl-p-[125-I]-Iodoamphetamine technique. There was no significant difference in mean hemispheric blood flow between controls (172.1ml/ 100g/min) and haloperidol 0.1 or 1.0 mg/kg i.v. administered groups (180.8; 164.5). For the regional distribution value of the blood flow, bilateral habenular nucleus showed a significant increase, whereas, medial prefrontal cortex and nucleus accumbens showed a tendency to decrease. The effect of chronic haloperidol administration is not yet completed, but these clinical and experimental studies would contribute to the understanding of the antipsychotic effects of neuroleptics.

## Research Products (2 results)

All Other

All Publications (2 results)

[Publications] Kurachi M, et al. edited by Takahashi et al: "Regional cerebral blood flow in patients with schizophrenic disorders. In: Cerebral dynamics, laterality and psychopathology" Elsevier, Amsterdam, 493-501 (1987) ▼

[Publications] Kurachi et al.;: Regional cerebral blood flow in patients with schizophrenic disorders : In : Cerebral dynamics, laterality and psychopathology (edited by Takahashi, et al). Elsevier, Amsterdam, pp9 493-501 (1987) ▼

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