

Olanzapine - A Burden of Care

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HSE Addiction Services / The Drug Treatment Centre Board
Dublin

Study Aim

- To quantify serum lipid & glucose levels
- To assess indications

for those prescribed olanzapine in a patient cohort attending a drug treatment clinic in Dublin city centre

Background – Psychological Morbidity

- Severe and enduring mental illness is a great individual and global burden
- Mental illness is over-represented among those who misuse illicit drugs
- Effective treatment reduces symptoms, relapse and can improve social functioning

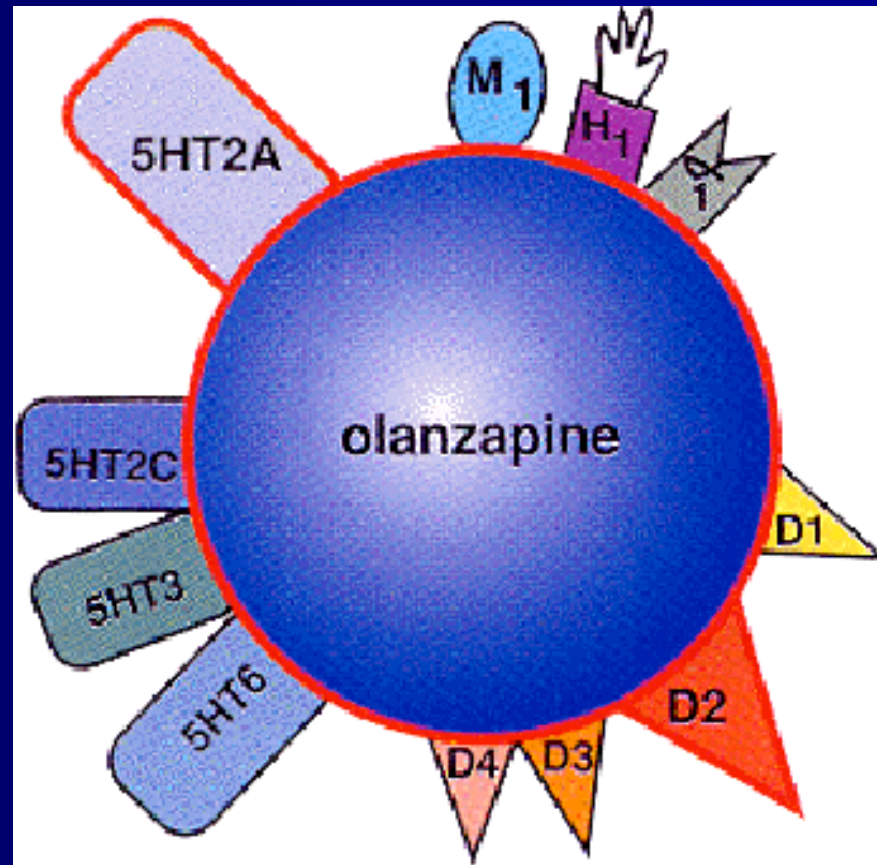
Physical Morbidity

- Link between mental and physical health / illness
- Prevalence of Type 2 Diabetes Mellitus increased in probands and 1st degree relatives of those with
 - Depression
 - Bipolar affective disorder
 - Schizophrenia

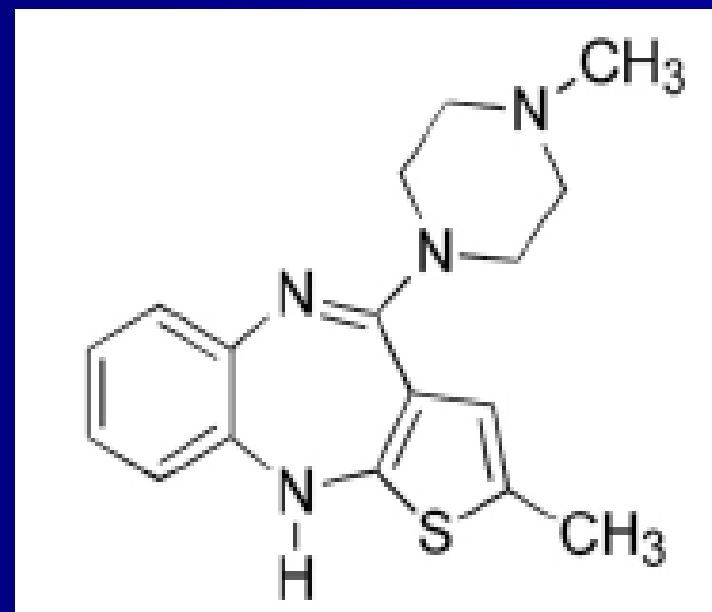
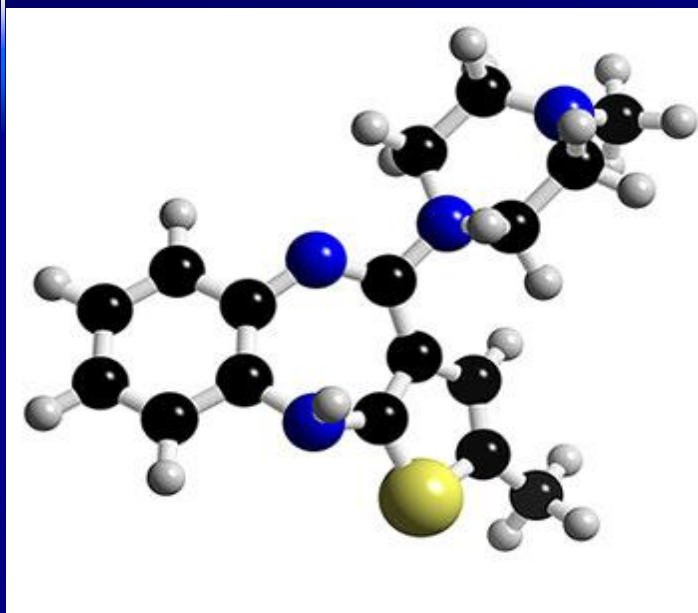
Olanzapine Characteristics

- 2nd generation neuroleptic
- Effective treatment for schizophrenia, mania and bipolar affective disorder
- Lesser propensity for EPSE than 1st generation neuroleptics
- Greater propensity for metabolic side-effects than 1st generation meds
- Associated with metabolic dysregulation - hyperglycaemia and hyperlipidaemia

Olanzapine Receptors



Olanzapine Structure



2-Methyl-4-(4-methyl-1-piperazinyl)-10H-thienol[2,3-b][1,5]benzodiazepine

Metabolic Dysregulation

- Proposed mechanisms of hyperglycaemia:
 - 5HT2A/ 5HT2C antagonism
 - leptin resistance
 - weight gain
 - increased serum lipids
- Raised triglyceride levels:
 - associated with obesity and diabetes mellitus

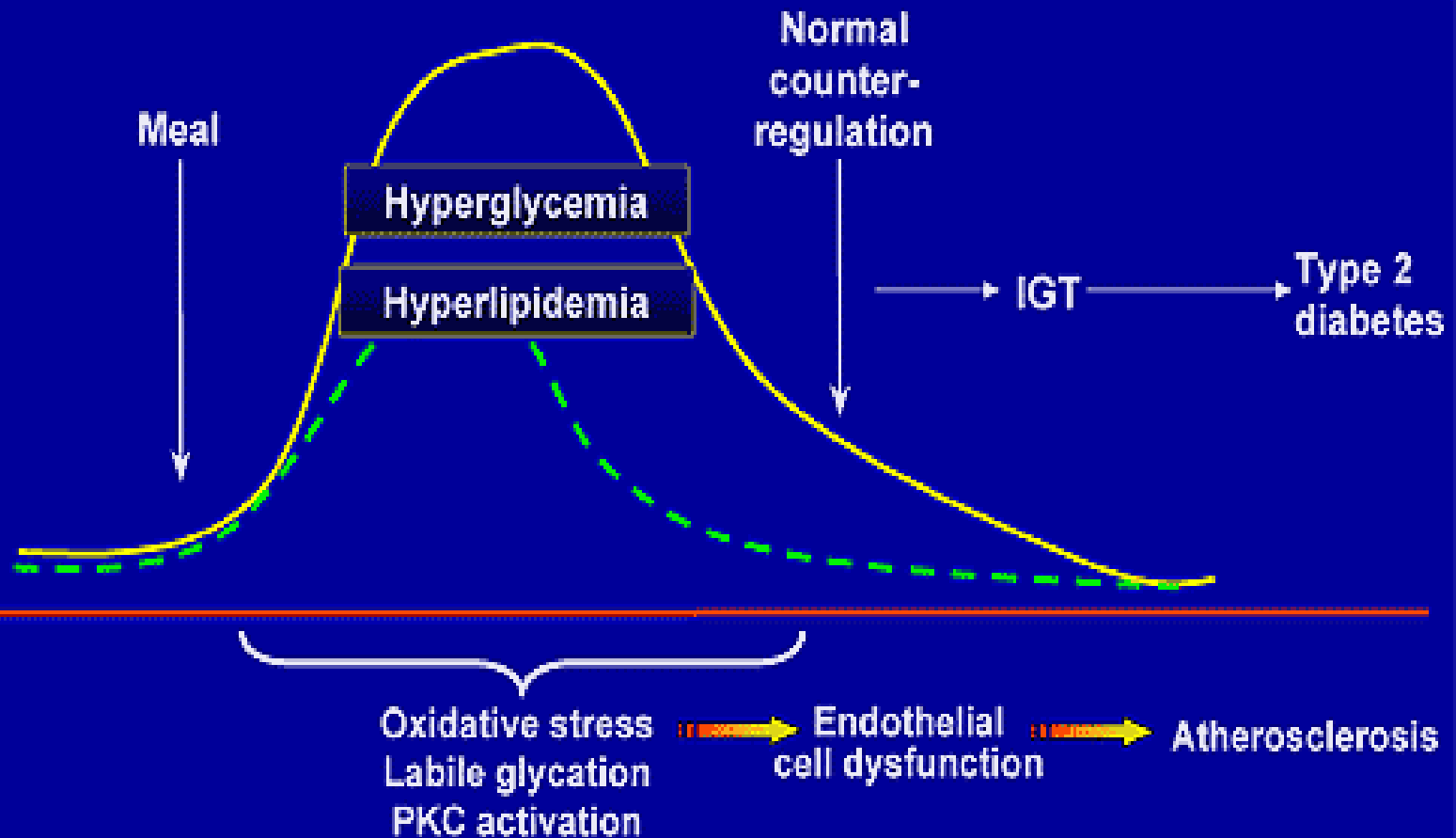
Metabolic Syndrome

Syndrome X / Insulin Resistance

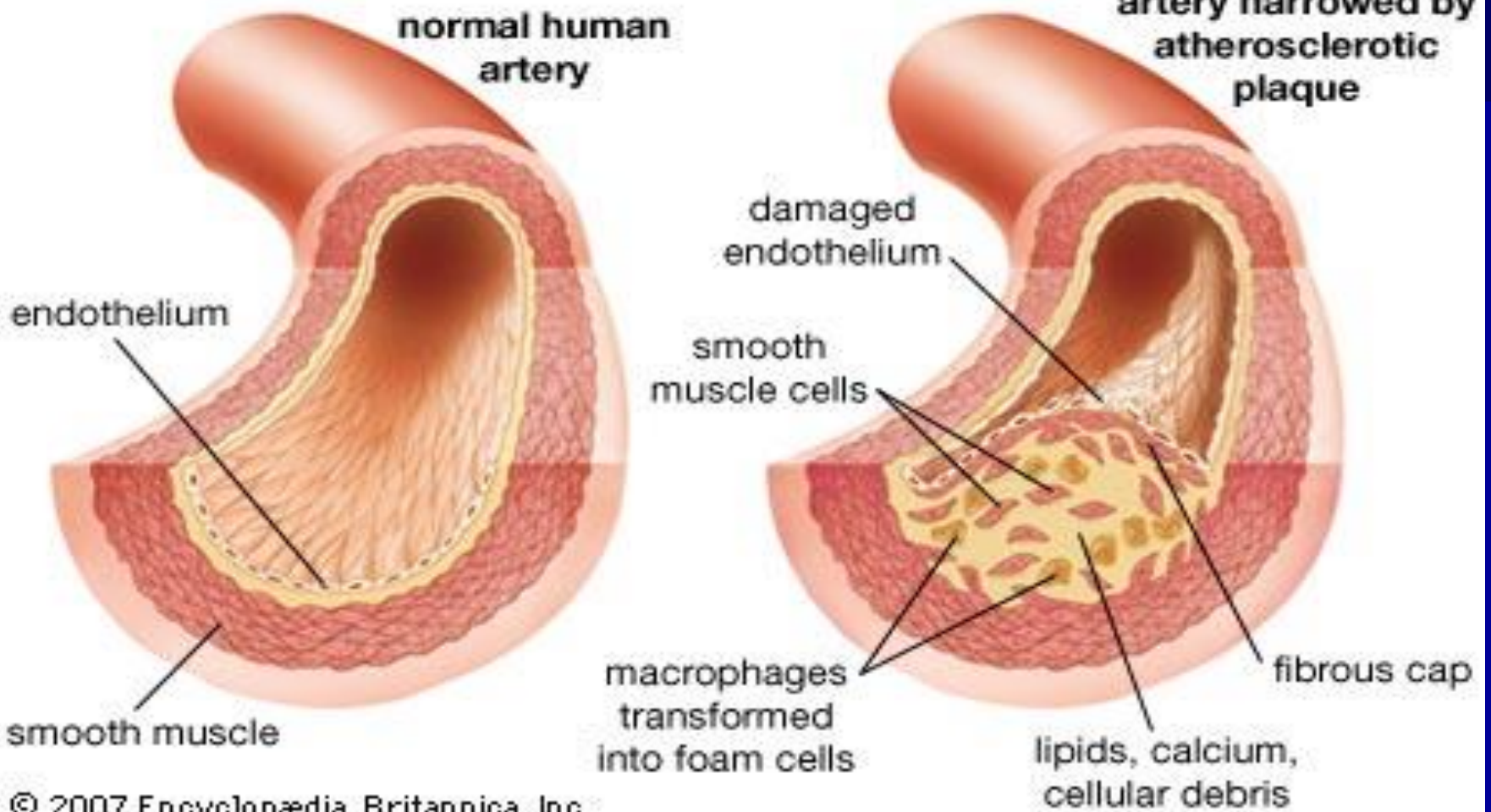
Three or more of the following:

- Abdominal Obesity:
 - Waist circumference > 102cm (M)
> 88 cm (F)
- High blood pressure: > 130/ 85
- Hypertriglyceridaemia: ≥ 1.69 mmol/l
- Low HDL Cholesterol: < 1.04 mmol/l (M)
< 1.29 mmol/l (F)
- High fasting blood Glucose: ≥ 6.1 mmol/l

Effect of Hyperglycemia on the Vascular Wall



Atherosclerosis



Research Method

- Case series /cross-sectional review, April '09
- Patients then prescribed olanzapine at a drug treatment clinic in Dublin city
- One sector assessed - 168 patients
- *Data:* indication for olanzapine, serum cholesterol, HDL cholesterol, triglycerides, glucose measurements (fasting), other medication prescribed, basic demographics

Results – Lab Indices

26 out of 168 patients prescribed olanzapine
13 with abnormal lab results

- 6 (23.1%) patients - raised cholesterol
- 5 (19.2%) - low HDL cholesterol
- 6 (23.1%) - raised triglycerides
- 3 (11.55%) - raised serum glucose

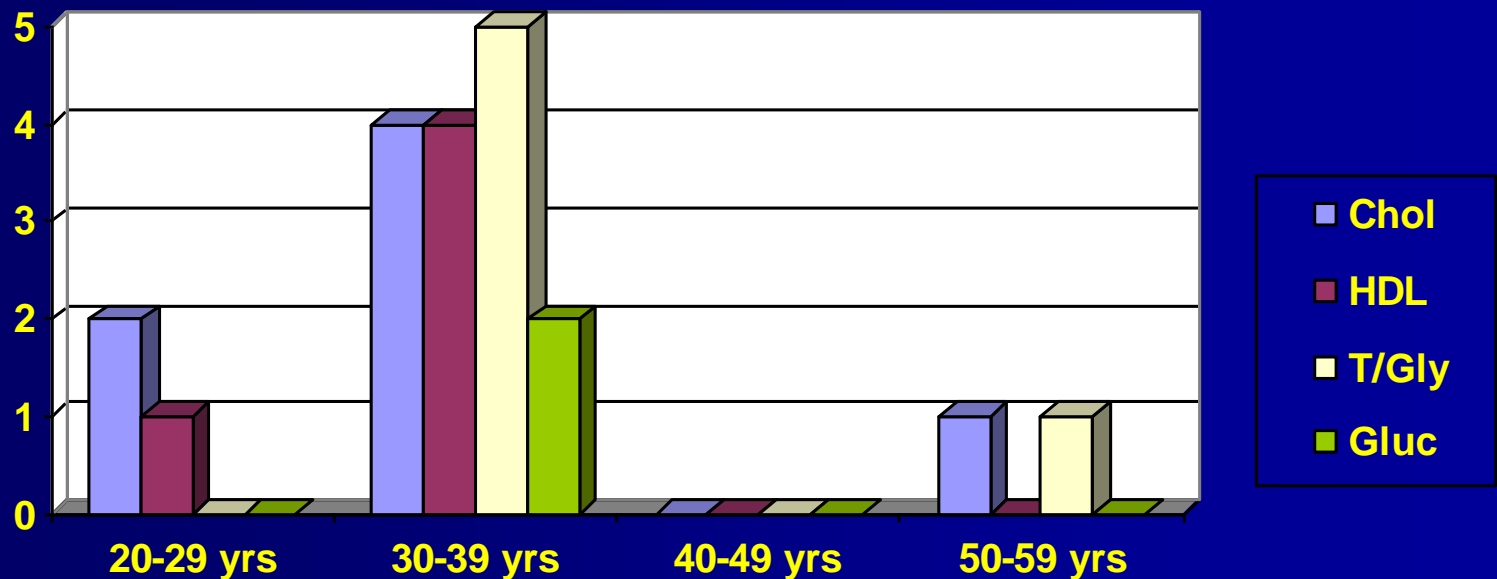
Data unavailable in 9 cases for cholesterol
10 cases for triglycerides
4 cases for glucose
12 cases for HDL

Results – Indication for Olanzapine

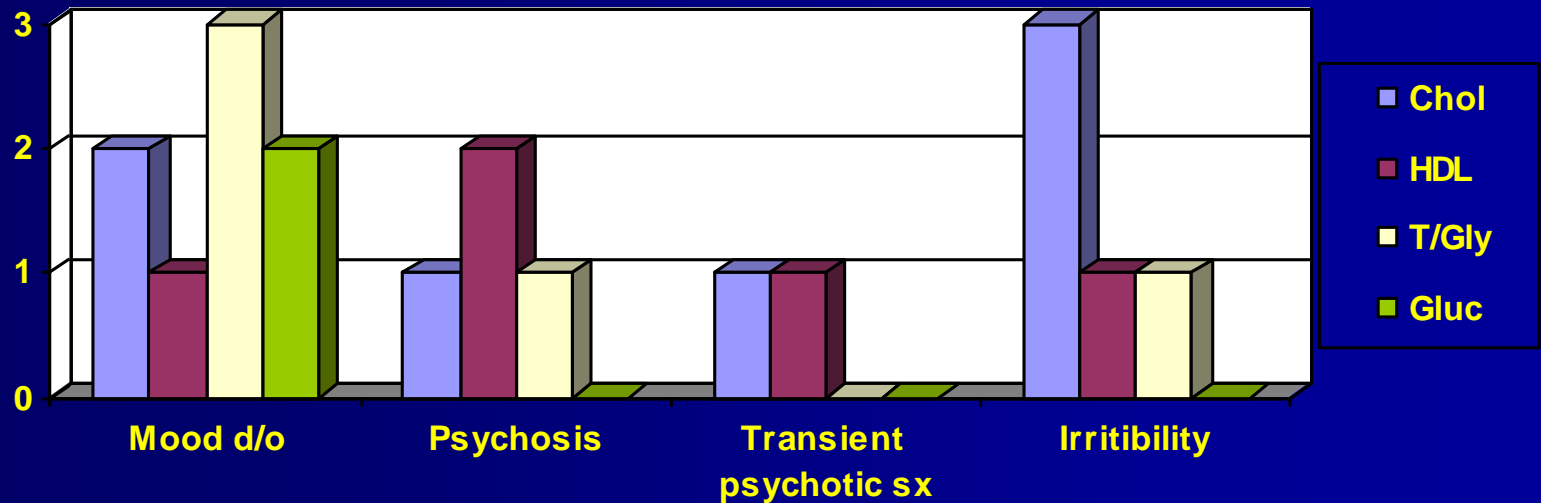
- 9 patients (34.65%) - mood disorder/
bipolar affective disorder
- 4 (15.4%) - chronic psychotic illness
- 7 (26.95%) - transient psychotic-type sx.
- 6 (23.1%) - sleep disturbance / reduce
irritability

	MALE	FEMALE
Number	22	4
Av. Age (yrs)	32	31
Av. Olanz. dose (mg)	15	19
High Chol. (no.)	6	0
High T/Gly	5	1
Low HDL	3	2
High Glucose	3	0

Number of Patients with Abnormal Blood Results per Age-Group



Number of Patients with Abnormal Blood Results per Olanzapine Indication



Results (cont)

- 6 prescribed medication in addition to methadone and olanzapine:
 - valproate x 2; lamotrigine x 1
 - mirtazepine x 1; SSRI x3
- 4 of 6 people prescribed olanzapine to treat irritability/ sleep disturbance were also prescribed antidepressant medication
- Mean olanzapine dose - 15.5mg p.o./d.

Olanzapine Prescribers

Olanzapine had been initiated by various sources:

- drug treatment facilities
- adult psychiatric services
- forensic psychiatric services

Conclusions

- Highlights olanzapine's association with metabolic dysregulation
- Raised serum lipid (23.1%); raised glucose (11.55%); low HDL cholesterol (19.2%)
- Likely underestimate – data unavailable
- Awareness of Metabolic Syndrome
- Prescribing policies review
- Mental and physical monitoring vital
- Integration of services
- Protocols needed – prescribing, monitoring, integrated care pathways

Recommendations

- Baseline bloods – fasting glucose; triglycerides; HDL cholesterol
- Baseline waist circumference
- Baseline b.p.
- Incorporate above into care plan with e.g. 3-6 monthly rechecks
- Hx. – ? family hx DM / raised lipids
- Monitor sx – e.g. polyuria, polydipsia, polyphagia
- Lifestyle programmes / CBT
- Appropriate prescribing practices – per licence / evidence

Thank you!

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