



## RESULTS

These subjects excreted averagely  $1592.0 \pm 609.3$  ml of urine with an indican output of  $60.7 \pm 17.4$  mg in 24 hrs.

The average values of indican excreted by these elderly subjects (60+) was similar for 5 yearly age groups as shown in graph below :

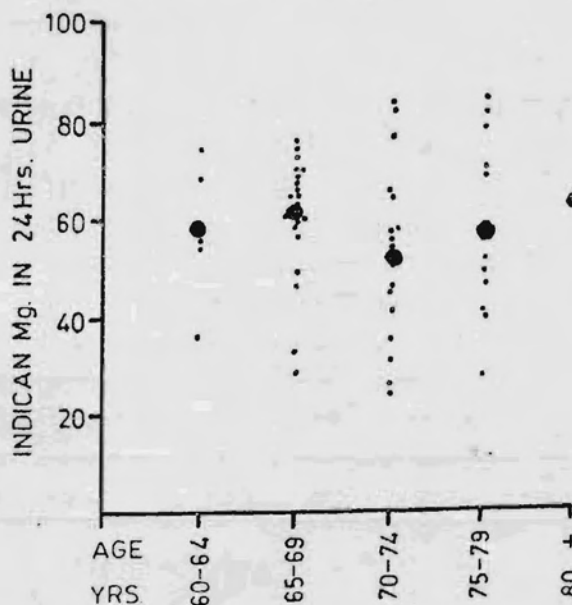


Fig. 1 : Indican in Mg in 24 hrs urine for 5 Yrly age groups.

## DISCUSSION

The aminoacid tryptophan in diet is converted to indole in the intestines and subsequently conjugated with  $H_2SO_4$  to form indoxyl sulphuric acid i.e. Indican.

Human urine hardly shows any indican at birth, but soon after developing bacterial flora in the intestines, indican is detected in the urine (7). Some investigators (3,5,6, 8,12) have reported about 40-50 mg. as an average output in adults. In the present series, average indican value was ( $60.7 \pm 17.4$  mg) for elderly Indians. This is slightly higher than the literature values for younger subjects.

The amount of indican is a rough measure of the degree of decomposition in the intestines. Simple constipation may give rise to larger excretion of indican in urine. An attempt was made to correlate their output with some findings like mild constipation, diarrhoea, higher B.P., diabetes or raised cholesterol, etc. as obtained in some subjects, but no significant relationship could be found.

Average protein intake of the present group was about 56 g giving tryptophan value of 485 mg per day. Though the tryptophan consumption in European protein rich dietary is considerably larger, their average output of indican is reported to be similar to that of Indians, indicating that factors like bacterial activity are more important than the mere presence of precursor - tryptophan in diet.

*Indican as a fraction of ethereal sulphates in urine:* The inorganic and organic sulphur output of Indian subjects, reported in literature varies between 650-1030 mg and 72-150 mg respectively (2,9,10,11).

The output of S in Indians is less than 50% of that in Europeans (4). This could be understood since sulphur in urine is derived from proteins which are consumed in much higher amounts in the meat-rich European dietary.

Meagre data is available as regards the amounts of ethereal sulphates in urine. To satisfy this curiosity, 10 subjects were studied in details as regards the different forms of S in urine. The results are summarised in Table I.

TABLE I : Urine analysis for various forms of S.

No. of subjects	Urine vol. ml	Inorg. Sulphate mg	Ethereal sulphate mg	Indican mg
10 men	1711.0 ± 559.4	720.01 ± 150.0	74.0 ± 22.0	53.8 ± 17.4

The values in above table show that about 75% of ethereal sulphate eliminated is in the form of indican.

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