DISCUSSION

Gastric acid output in Indians with duodenal ulcers appears to be similar to levels reported in a group of White and Coloured people from Cape Town. The levels are higher than those reported in Indians from other centres. As the weights and ages in our subjects did not differ from those reported in Caucasians, we did not relate acid output to lean body mass. Careful positioning of nasogastric tubes and collection of specimens may contribute to higher levels in our series. Gastric acid levels in our series of Indian control subjects are also similar to those of Caucasians.

It is suggested that no differences could be ascribed to the use of pentagastrin as a stimulus rather than histamine acid phosphate. Both stimuli produce similar acid outputs.

REFERENCES

Gastric Acid Output in Normal Indians


SUMMARY

Gastric acid output was measured in 76 normal Indian subjects. Mean basal and maximal acid outputs were similar to those of Whites in both males and females, and were higher than those reported in Indians in other centres.


Gastric acid output is said to be low in normal Indian subjects. When acid output has been related to lean body mass, levels correlate better with Caucasian controls. In order to test whether gastric acid levels in normal Indians are different from normal Caucasians, acid studies were performed in normal Indian subjects.

MATERIALS AND METHODS

Seventy-six normal Indian subjects, aged 13 to 69 years, were studied. Fifty-one were males and 25 were females.

None had symptoms referable to the gastro-intestinal tract. Gastric acid output was assessed as follows: after an overnight fast, radio-opaque nasogastric tubes were placed in the antrum under fluoroscopic control in every case. The stomach was emptied of overnight and fasting secretions, and a basal collection of one hour was undertaken. An intramuscular injection of pentagastrin 6 μg/kg was then administered and for a further hour secretions were collected in four 15-minute specimens which represented maximal acid output. All tests were done by two trained technicians who were in constant attendance. Suction was continuously maintained at 200 mmHg, and augmented at 5-minute intervals with hand suction. Specimens were titrated to pH 3.5 with Toepffer’s reagent (‘free acid’), and pH 7.4 with phenolphthalein (‘total acid’). Only the total acid figures are quoted, as it is believed that the distinction between free and total acidity has no validity. Acid output was thus measured as to volume and concentration.

RESULTS

All figures are means ± one standard deviation in mEq/h gastric acid output.
Mean basal acid output in 51 normal Indian males was 4.3 ± 3.8 mEq/h, and the mean maximal acid output was 22.2 ± 6.1 mEq/h (Fig. 1).

Mean weight (± SD) of the 51 Indian males was 55.5 ± 9.0 kg, and of the 25 Indian females 57.0 ± 10.1 kg. Mean age (± SD) of the 51 Indian males was 35.3 ± 13.8 years and of the 25 Indian females 40.7 ± 11.1 years.

**DISCUSSION**

The results of the pentagastrin stimulation in normal Indian subjects agree closely with the levels using histamine acid phosphate in Caucasians in other centres (Table I).²

<table>
<thead>
<tr>
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<th>Males: Marks et al.¹</th>
<th>Females: Marks and Shay²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basal acid output</td>
<td>3.7 ± 2.1</td>
<td>15.0 ± 5.4</td>
</tr>
<tr>
<td>Max. acid output</td>
<td>15.5 ± 5.2</td>
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</tbody>
</table>

The levels are higher than those reported in Indians from other centres.² The weights and ages of our controls seem to be similar to those of Caucasians, and are greater than those of Indians reported elsewhere.³ This may explain the higher acid output in our series. We did not relate the acid output to lean body mass. Meticulous care in the placing of tubes and in collections of volumes may contribute to higher levels in our series. Gastric acid levels in our series of Indians with duodenal ulcers are also similar to those of Caucasians.³ It is suggested that no differences could be ascribed to the use of pentagastrin as a stimulus rather than histamine acid phosphate. Both stimuli produce similar acid outputs.⁴

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**REFERENCES**