ABSTRACT:

Both etiology and therapy of eleven diabetes insipidus patients in Nakorn Chiang Mai Hospital during 1968-1976 were reviewed. The major cause was idiopathic and all of the patients in this category were young adults.

It was found that chlorpropamide alone or combined with pitressin tannate in oil were equally effective. Two cases responded quite dramatically to thiazide alone. In one case high dose of thiazide alone failed to yield any response, the addition of chlorpropamide to the regimen resulted in striking improvement.

Diabetes insipidus is one of uncommon medical disorders. It is characterized by polyuria of diluted urine with secondary polydipsia. This disorder may result from any condition which interferes the functional integrity of the neurohypophyseal system with a consequent deficiency of vasopressin. Similarly polyuria with polydipsia may be due to a failure of the renal tubules to respond to vasopressin, giving rise to nephrogenic diabetes insipidus which is hereditary (1).

In this paper, the authors have reported their experience with 11 cases of this disorder.

MATERIAL AND METHODS:

Eleven cases with final diagnosis of diabetes insipidus in Nakorn Chiang Mai Hospital from 1968-1976 were reviewed. There were 3 females and 8 males with the age range of 15-74 years.
The investigations included serum, calcium, potassium, blood urea nitrogen, serum creatinine, serologic test for syphilis, tuberculin test by using Old Tuberculin, roentgenograms of the skull and chest. Brain scan; pneumoventriculogram and serum protein electrophoresis were done in certain cases.

Neurohypophyseal function test was performed in all cases but nico- tinic administration was omitted due to some difficulty. Serum and urine osmolarity were simultaneously measured. Tumors found were histologically proved.

RESULT:

Five cases were idiopathic. This diagnosis was made by excluding other possible causes after the aforementioned investigations. In all 5 cases, serum calcium, serum potassium blood urea nitrogen and serum creatinine were essentially normal. Serologic tests in all patients were nonreactive: tuberculin test (Old Tuberculin) 1:1,000; roentgenogram of the skull and chest were individually negative.

Three cases were caused by tumors (the details were given in the following table), one case resulted from head trauma, one case was Hand-Schuller-Christian disease (from biopsy of the skull) and the last one was nephrogenic diabetes insipidus which was previously reported in details(2). The management for this patient was not hereby mentioned.

Pitressin tannate in oil was administered in 5 cases as for therapy. The responses of three cases were satisfactory with this regime but the responses of other two cases could not be readily evaluated due to the patient's incooperations.

Two cases were administered solely with chlorpropamide and the urinary output was reduced by 40-90%. Chlorpropamide in combination with pitressin tannate in oil seemed also to work fairly well in these 2 cases. This regime decreased the urinary output to 50%. Other two cases responded quite dramatically to thiazide alone. The last case failed to respond to high dose of thiazide but responded satisfactorily when chlorpropamide was added.

<table>
<thead>
<tr>
<th>Etiology of Diabetes Insipidus</th>
<th>Number of Cases</th>
<th>Age-Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Idiopathic</td>
<td>5</td>
<td>25(M), 26(F), 28(M), 29(F), 31(M)</td>
</tr>
<tr>
<td>Chromophobe adenoma with meningioma</td>
<td>1</td>
<td>18(M)</td>
</tr>
<tr>
<td>Adenocarcinoma of breast with metastasis to brain</td>
<td>1</td>
<td>45(F)</td>
</tr>
<tr>
<td>Bronchogenic carcinoma with metastasis to brain</td>
<td>1</td>
<td>74(M)</td>
</tr>
<tr>
<td>Head trauma</td>
<td>1</td>
<td>21(M)</td>
</tr>
<tr>
<td>Hand-Schuller-Christian disease</td>
<td>1</td>
<td>19(M)</td>
</tr>
<tr>
<td>Nephrogenic</td>
<td>1</td>
<td>15(M)</td>
</tr>
</tbody>
</table>
COMMENT

Head trauma (accidental or neurological) and neoplasm of hypothalamic hypophyseal system (primary or metastatic) are major causes of acquired diabetes insipidus(3). However, in the authors' experience, several cases of head injury manifested inappropriate ACH-secretion in the acute stage instead of diabetes insipidus. In this small series, the major cause of diabetes insipidus was idopathic and all of these patients were young adults. The next was neoplasm (primary and metastatic) of the hypothalamic hypophyseal system.

With regard to the treatment, the authors have found that chlorpropamid alone, the antidiuretic effect of which is accomplished by three actions: the direct stimulation on adenyl cyclase, the enhancement of response to vasopressin and the action against prostaglandins which inhibit the activity of adenyl cyclase(4), or in combination with pitressin tannate in oil, were equally effective. Thiazide alone, the effect of which correlates with the sodium deficit it induces, was of benefit in two cases, but in one case inspite of high dose of thiazide there was no response and chlorpropamide had to be added in order to obtain beneficial effect.

The authors, so far, have not made any trial with clofibrate or carbamazepine that have been claimed to be effective in the state of incomplete ADH deficiency(8,9,10).

REFERENCES


