Correspondence

Cassia occidentalis toxicity causes recurrent outbreaks of brain disease in children in Saharanpur

SIR,

Three recent papers in IJMR have made a great impact on our clinical practice in Saharanpur, Uttar Pradesh. We, in-charge of the paediatric division of the Government District Hospital of Saharanpur, have been under severe stress on account of the recurring annual outbreaks of unexplained acute brain disease in children, with very high (70-80%) mortality. National agencies including National Institute of Communication Diseases (NICD), Delhi and National Institute of Virology (NIV), Pune have investigated the outbreaks every year for many years and have diagnosed the disease as ‘acute viral encephalitis of unknown origin’. Under the assumption that many if not most of these cases, were due to Japanese encephalitis (JE), a mass vaccination campaign was conducted in the district in 2006, using the live attenuated SA-14-14-2 vaccine. The community co-operated extremely well and a total of 9.28 lakhs children aged 1-15 yr out of the target of 10.6 lakhs, were immunized during May and June 2007 (Government of UP, UNICEF and PATH joint action) (Aggarwal BL, personal communication, 2007).

However, even in 2007 we got many children with the same illness who gave a history of receiving JE vaccination. About a quarter of cases were vaccinated, virtually disproving JE aetiology.

We have been admitting such cases for over a decade. Senior colleagues and staff member similar cases coming to the hospital since 1980. In 2002 the news media publicized this problem and since then it had become a politically charged issue. Therefore, from November 2002 we have maintained proper records (Table). Due to the large numbers of cases, we opened a well-equipped “encephalitis ward” for efficient management of cases.

After the reports of studies in Bijnor, we realized that the seasonality, as well as the epidemiological, clinical and laboratory profile of cases matched exactly what was described by Vashishtha et al. The survivors were without any neurological sequelae, unlike in JE. In 2007, we began asking parents about history of consumption of Cassia occidentalis beans by the children and got positive history in 30 (40.5%) among 74 cases in whom the history was taken. However, we could not conduct surveys of household of the affected cases. At times the parent was brought the entire plant along with the pods in support of their claim. Indeed, our staff members have now disclosed that they had obtained history of children eating the Cassia beans in several cases, but thought it to be inconsequential and did not mention it to the health officers. Their explanation was that the disease was widely believed to be encephalitis and the fact that children ate something unusual was felt to be of no value.

We are now convinced that these outbreaks were caused not by any virus, but by Cassia toxicity. We are also convinced that the disease was not encephalitis as believed so far, but a syndrome of acute hepato-myoecephalopathy.

Table. Numbers of admitted cases and deaths in Saharanpur District Hospital, 2002-2007

<table>
<thead>
<tr>
<th>Year</th>
<th>Total cases</th>
<th>Deaths</th>
<th>Mortality (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002*</td>
<td>79</td>
<td>57</td>
<td>72.2</td>
</tr>
<tr>
<td>2003</td>
<td>100</td>
<td>78</td>
<td>78.8</td>
</tr>
<tr>
<td>2004</td>
<td>159</td>
<td>114</td>
<td>71.7</td>
</tr>
<tr>
<td>2005</td>
<td>239</td>
<td>175</td>
<td>73.2</td>
</tr>
<tr>
<td>2006</td>
<td>105</td>
<td>74</td>
<td>70.5</td>
</tr>
<tr>
<td>2007**</td>
<td>114</td>
<td>81</td>
<td>71.1</td>
</tr>
</tbody>
</table>

*Cases only from November.
**Total number was 136, but 17 were referred elsewhere and 5 were taken home voluntarily by parents.
The weed, *C. occidentalis* is widely prevalent in the entire district of Saharanpur and is called “panwad” and ‘kasondi’. The density of the weed during the second half of the year is so high that they can be seen everywhere, including our hospital campus. However, as mentioned in one of the papers, the local population is almost totally oblivious of the ill-effects of the weed. They use the dried plant for fuel. The need of the hour is to launch all out efforts to educate the public about this noxious agent. We have already commenced such public education through the health department staff, supported by the State Government (Ministry of Health and Family Welfare).

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**References**