Letters to the Editor

Is enrichment culture necessary for the isolation of Campylobacter jejuni from faeces?

Hutchinson and Bolton\(^1\) conclude that enrichment culture is only necessary for the isolation of Campylobacter jejuni from faeces when the anticipated number of organisms in the specimen is low. Our experience is different.

After an initial report on 393 human faecal samples\(^2\) we examined a further 2081 specimens by the same technique. One hundred and sixteen of these (5.6\%) were positive on direct culture and a further 34 (a 29.3\% increase) on enrichment. If all 3202 specimens were examined, 155 were positive direct and 63 on enrichment alone, an overall increase of 40.7\%.

A breakdown of figures according to duration of symptoms before sampling and delay in culturing after sampling is shown in Tables 1 and 2.

The increased yield on enrichment with our second batch of samples was considerably less than that obtained with our first batch but was still almost 30\%. The breakdown supports our earlier contention\(^2\) that there is benefit in using enrichment when examining late or delayed specimens. The 23.3\% increase in yield on enrichment with specimens taken in the first week of illness and the 24.0\% increase with specimens cultured on the day of sampling does not, however, accord with Hutchinson and Bolton's suggestion\(^1\) that enrichment is of little benefit in these circumstances.

The difference may be explained, in part at least, by the fact that Skirrow's medium\(^3\) has been used for selective isolation in this laboratory, whereas Hutchinson and Bolton have used Preston medium.\(^4\) The Preston medium is reported to give a better isolation rate on direct culture.\(^5\)

Bearing in mind that Skirrow's and other possibly less effective media\(^2\) are likely to remain in widespread use for some time we suggest that it is premature to recommend restriction of the use of enrichment techniques for the isolation of campylobacters from faeces.

CD RIBEIRO

SJ GRAY

TH PRICE

Public Health Laboratory,
University Hospital of Wales,
Heath Park, Cardiff CF4 4XW

References


Table 1 Increased yield on enrichment relative to duration of symptoms

<table>
<thead>
<tr>
<th>Duration of symptoms</th>
<th>No positive*</th>
<th>No positive on enrichment alone</th>
</tr>
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<tbody>
<tr>
<td>Up to 1 week</td>
<td>69</td>
<td>16 (23.2%)</td>
</tr>
<tr>
<td>More than 1 week</td>
<td>78</td>
<td>32 (41.0%)</td>
</tr>
</tbody>
</table>

*Information on duration of symptoms not available on 71 specimens.

Table 2 Increased yield on enrichment relative to delay in culturing

<table>
<thead>
<tr>
<th>Specimen cultured</th>
<th>No positive*</th>
<th>No positive on enrichment alone</th>
</tr>
</thead>
<tbody>
<tr>
<td>On day of sampling</td>
<td>125</td>
<td>30 (24.0%)</td>
</tr>
<tr>
<td>After day of sampling</td>
<td>55</td>
<td>20 (36.4%)</td>
</tr>
</tbody>
</table>

*Information on delay in culturing not available on 38 specimens.

He states that the swabs used in the routine disc test were moistened in Nutrient Broth No 2. I would like to point out that this factor alone could account for the 5\% increase in our results. I conclude from this study that some of these unreported work which preceeded my paper "H influenzae and H parainfluenzae: the influence of media and CO\(_2\) differentiation using X, V, and XV discs".\(^3\)

Comparisons were carried out on three main criteria: the type of agar used, the liquid used for emulsification of the organism, and the atmospheric conditions. The first criterion studied was the liquid used for emulsification of the organism. Three types were compared: nutrient broth, peptone water, and saline. With the other factors remaining constant, the use of nutrient broth, growth often occurred around the V disc as well as the XV disc—in other words, making it appear that the organism was H parainfluenzae. In comparison, the cultures emulsified in peptone water would sometimes show growth around the V as well as the XV disc. When emulsified in saline only a small proportion grew around the V disc as well as the XV disc and would hence be reported as H parainfluenzae—majority, having grown only around the XV disc, were reported as H influenzae. Thus it was established that the nutrient broth in particular was enabling the organism to grow around the V disc as well as the XV disc, thereby giving a false identification. The organism never failed to grow using the peptone water or the saline, so it was decided to incorporate the saline into routine use as this gave fewer numbers of Haemophilus spp identified as H parainfluenzae.

I subsequently published only the comparison between the types of agar and atmospheric conditions at the request of the referees to shorten the article.

I hope that this may be of interest. It in no way constitutes criticism of this more recent paper, which I found most informative.

ANNA JONES

Microbiology Laboratory, St George's Hospital, Stafford

References