Letters to the Editor

Immunofluorescent Technique for Rapid Virus Diagnosis of Cells in Nasopharyngeal Secretions

We feel that Dr Urquhart and Dr Walker will expect us to comment on their article (J. clin. Path., 1972, 25, 843).

There will be opportunities to discuss our mutual experiences in detail but some observations are called for now.

We have now used an immunofluorescent technique for rapid virus diagnosis of cells in nasopharyngeal secretions for five years. During the period September 1969-March 1972 this provided positive evidence of RS virus infection in 419 children out of 423 from whom the virus was isolated.

In our experience immunofluorescence carried out on tissue culture at five to seven days was less sensitive than the examination of cells in nasopharyngeal aspirates. We can therefore only conclude that Dr Urquhart and Dr Walker have used a different and less effective method—either in taking their specimens or in preparing their slides. Either of these explanations would account for the paucity of epithelial cells in the preparation, which is exceedingly rare in our experience. The 22 children on which their conclusions are based are a very small proportion of the children in Glasgow with lower respiratory tract infection due to RS virus. In an average winter month we receive 700 specimens for respiratory virus diagnosis, and a reasonable service for the country, especially the large conurbations, would therefore be impossible if laboratories were persuaded to return to culture techniques alone. We are supported in asking them to review their method by the knowledge that other laboratories are achieving comparable results to our own.

We were also disturbed by the statement that ‘unless specific or selective therapy is available for cases of serious RS virus infection rapid diagnosis is not essential’. Dr Urquhart and Dr Walker do not define the clinical categories used in their paper but we find that the application of consistent clinical and radiological definitions to children with lower respiratory tract infections, together with rapid virus diagnosis, has enabled us to withhold antibiotics selectively and safely, especially in bronchiolitis. It would in our view be a backward step in the understanding and management of respiratory infections if virus diagnosis was only available seven or more days after admission, when for most children and for the doctors concerned, the severe phase of the illness has passed. Since specific therapy is likely to come sooner or later it is illogical to abandon the essential diagnostic technique in the interval.

There are other cogent reasons for rapid virus diagnosis besides the evolution of rational therapy. In most seasons more than one respiratory virus is epidemic in our community at the same time and rapid virus diagnosis will help to separate them. Indeed, this technique is now a major tool in exploring the epidemiology of respiratory infection.

The extent of virus cross-infection in children’s wards is neither widely recognized nor the ways in which it occurs fully understood; in our experience when wards are filled with respiratory infections rapid virus diagnosis has made possible the nursing of like with like and the best

Hydroxide. The final volume is then made up to 25 ml with distilled water. The acid in the trap is discarded into free-flowing water in a glass diluting chamber. The figure shows how six ‘closed’ wet ashing systems can be arranged within the confines of a small hood.

Comment

The ‘closed’ wet ashing procedure allows for a very controlled digestion of tissues over any preselected time period. The system is simple and very effective in completely solubilizing tissues. It carries with it the advantages that its use is not attended by pollution of the atmosphere with acid fumes; complete digestion of tissue can be effected using a small volume of acid and corrosion of the laboratory hood and ducting system is eliminated.

References


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use of the limited facilities for isolation.

We are willing to learn from colleagues working in this difficult field but a well tested diagnostic technique should not be dismissed before a technical explanation for its failure has been thoroughly examined.

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Bogus Branched-chain Aminoaciduria

Dip-inoculation methods are used increasingly to help in the diagnosis of urinary tract infections (Mackey and Sandys, 1965; Guttman and Naylor, 1967; Mackay-Scollay, 1969; Jacobs, Woods, and Ramsden, 1972). In all these methods a nutrient culture medium is allowed to come into transient contact with freshly voided urine. The medium is then transported to the laboratory for bacteriological examination in one container, while the urine specimen itself may be sent to the laboratory in another for chemical examination. However, if contact of the urine with the nutrient medium is inadvertently prolonged, amino acid chromatography may give misleading results.

A urine specimen was received for amino acid chromatography from an infant at another hospital with feeding difficulties and failure to thrive. One-dimensional paper chromatography in butanol-acetic acid-water (Smith, 1969) showed an abnormal pattern with increased amounts of leucine and valine. However, no member of the laboratory staff was able to detect a maple syrup odour in the urine, and the dinitrophenyl-hydrazone test for alpha-keto-acids (Varley, 1967) was negative. The urine also contained lactose. It was then found that the urine had been transported in a bottle closed with the screw cap containing CLED medium in 1-5% agar. The three markers are iso-leucine, leucine, and valine.

Ten ml aliquots of three normal urines were allowed to stand overnight in inverted bottles closed with either a plain screw cap or a screw cap containing CLED medium in agar. The changes in the one-dimensional amino acid chromatograms are shown in the figure. Sugar

References


Fig One-dimensional urine amino acid chromatograms of three normal urine specimens with (T) and without (U) overnight contact with a urine bottle screw cap containing CLED medium in 1-5% agar. The three markers are iso-leucine, leucine, and valine.
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