74.

HEPATITIS AND THE AUSTRALIA ANTIGEN
NOTE OF MEETING AT DHSS ON 20 JULY 1970

Present: Dr Maycock (Chairman)
Lord Rosenheim
Professor Sheila Sherlock
Professor A Polak
Dr J S Cameron
Dr A J Zuckerman
Dr A D Macrae
Dr Yvonne Cossart
Dr F O McCallum
Dr Brendan Moore
Dr S Stratton
Professor Marmion

Dr J G Thomson
Dr W B Obank
Dr I S Macdonald

Dr Maycock explained that the meeting had been called on an ad hoc basis to advise in general terms on the use of Australia Antigen in blood transfusion.

TESTING OF BLOOD DONATIONS

Two views were possible

a. that testing should not be introduced until more is known about the Australia Antigen and if it is introduced it should be done nationally and uniformly.

b. it should be introduced as and when possible.

Reagents for the test are scarce and vary in quality. So far there is no reference standard available. Complete testing of all blood donations in England and Wales would mean about 1½m. tests per annum. It has been calculated that this might prevent 1500 icteric cases a year although on the assumption that each blood transfusion involves an average of three donations the number of icteric cases prevented would be reduced to about 1000. There is however an uncertain number of anicteric cases which would be prevented.

Dr Zuckerman said that it was now clear that the Australia Antigen test was specific for one form of hepatitis. So far however it had been carried out extensively only in specialised laboratories. It has been difficult to undertake comparisons of the methods which could be employed. The gel diffusion method had been used most extensively but this was not the most sensitive method and did not give a quick answer. Immuio elétripheresis gave a quicker result but negatives could not be relied upon without further examination. This further examination could take several days and this reduced the value of this method in relation to blood transfusion. Complement fixation seemed to be the most sensitive method and the one most likely to lend itself to automation but this required larger quantities of reagent which is in very short supply. Reagent is not only scarce but there is considerable variation in the reagents obtained from different sources and the logistics of large scale testing have not been worked out. In Dr Zuckerman's view testing of all blood donations would be about 25 per cent effective in reducing the incidence of hepatitis.

He felt concerned not only about blood but about certain blood products which carried a high risk of transmitting hepatitis. The most important of these are fibrinogen, anti-haemophilic globulin, Christmas Factor and cryo precipitate. He suggested that all blood intended for fractionation and the final products should be tested.

It is important to emphasise that a negative result does not imply freedom from risk of infection but providing this is understood Dr Zuckerman suggested that screening should be started now if facilities and reagents are available.

Work is in progress in several centres to try to produce reagents in animals. Rabbits, mice, goats and guinea pigs were all mentioned and of these four guinea pigs seemed to be the most promising. There is some commercial interest in this. Bering hope to market reagents next January. Burroughs Wellcome are also interested although not yet at the commercial stage. These animal reagents will however have to be fully and completely characterised before they are issued for use and this can only be done against a reference serum of human origin.

Professor Sherlock said that this was no longer a research matter and it was not possible to hold back on the testing of blood donations. She suggested that the position was likely to get more complicated in the future as other antigens were identified. There are already hints that some of the apparent differencies between antibodies from different sources are due to the existence of more than one antibody.

As far as the methods of testing are concerned Dr Stratton said that complement fixation was not a practical proposition for the blood transfusion service. The gel diffusion method was probably the best and most practicable one at the moment.

TESTING OF MEDICAL AND OTHER STAFF IN HAEMODIALYSIS UNITS AND TRANSFUSION LABORATORIES

Experience in transfusion centres in Europe had shown that up to 3 per cent of staff in the transfusion service carried antibody. This seems to be in confliot with the general experience that the incidence of hepatitis among transfusion staff is low. The meeting seemed to agree that all staff in haemodialysis units and transfusion laboratories should be tested. It was recognised, however, that this would pose a problem in dealing with individuals found to be positive. The discussion on this was inconclusive but there appeared to be a view that such individuals should be suspended from duty.

PRIORITY IN THE USE OF DONATIONS TESTED FOR AUSTRALIA ANTIGEN

There was general agreement that priority should be given to patients in haemodialysis units, patients undergoing transplant surgery, those on chronic transfusion therapy, those undergoing a heart/lung surgery, those with decreased immunological competence and those with renal disease who might be candidates for haemodialysis at some future date. It seemed to be felt that the first priority should be patients in haemodialysis units but thereafter the order of priority was not so clear.

METHODS OF TESTING AND SUPPLIES OF REAGENTS

The Chairman asked whether testing should be carried out in virology laboratories or in the blood transfusion service. It was felt that eventually when the volume of work is considerable it should be undertaken in regional transfusion centres but Professor Marmion made a plea for flexibility and thought that there should

be co-operation between the blood transfusion service and the local virology laboratory which should be the source of expert help. It was felt that a reference laboratory would be needed in time but this should be linked to the supply of reagent. Dr Maycock said that some serum had now been obtained which might be useful as a reference serum. It may be that a reference antigen would also be needed. There was discussion about the use of animals in trying to produce reagent but it was stressed that human supplies were needed and it was important for the blood transfusion service to get hold of as many multi-transfused patients as possible. Dr Zuckerman thought that it was also worth looking at the staffs of transfusion services and haemodialysis units as some useful sera may be found from these sources.

PROTECTION OF STAFF IN CONTACT WITH POTENTIALLY INFECTED MATERIAL

There was a discussion about the use of gamma globulin. The general view seemed to be that this was not effective in preventing infection although Professor Marmion suggested that there was some evidence from Manchester and Edinburgh that it might have some effect in reducing the severity of the disease. It was agreed that the best policy to follow was that adopted in Edinburgh - to give gamma globulin where there was a clear history of some injury associated with the possibility of infection. Routine and repeated use of gamma globulin in the absence of such a history was condemned.

In conclusion Dr Maycock suggested that it would be a good plan to try to get one or two regional transfusion centres to begin screening and obtain experience of large scale use of the techniques.

I S MACDONALD
23 July 1970