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edge we are unable to give absolute reassurance that radiation exposure in early pregnancy is entirely benign. Therefore, anxieties about pregnancy outcome are raised which are not fully allayed even with the birth of an apparently normal infant.

The best solution to any problem is for there to be no problem. Dr Russell (April 17, p. 855) points out the surprising ease with which the ten-day rule can be applied; unnecessary anxiety about pregnancy outcome can be avoided by adherence to this rule. The psychological benefits cannot be measured, but it would seem to be considerate as well as prudent to restrict elective X-ray exposure to non-pregnant patients.

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VIRUSES IN ENDEMIC (BALKAN) NEPHROPATHY

SIR,—Apostolov et al.¹ described coronavirus-like particles in the cytoplasm of renal cells obtained by biopsy from patients with clinically confirmed endemic (Balkan) nephropathy (E.N.). In 1969 we demonstrated virus-like particles in the cytoplasm of renal tubular epithelial cells of patients dying of E.N.² The particles consisted of an electron-dense central core and an outer coat, varying in size from 50 to 90 nm.

Lately we have found similar virus particles in renal-biopsy specimens of three further E.N. patients, but we have not yet recovered the agent involved in long-term cultures set up with tissue fragments or dispersed cells. We have, however, isolated several cytopathic agents from throat swabs and urine specimens of family members sharing the housing and living conditions of E.N. patients. Some of these agents could readily be identified as adenovirus or echovirus strains, while other isolates are still under investigation.

Our electron-microscopic findings² prompted an epidemiological search for possible natural foci of viral infection in the endemic areas, in order to explain the restricted geographical distribution of this disease. Such attempts were encouraged by observations on the occurrence of local varieties of wild mice and sandflies in areas roughly superposable with those of E.N. These studies led to the recovery, identification, and characterisation of new cytomegalovirus strains from mice³ and ground squirrels,⁴ and of a ground squirrel herpesvirus.⁵

Relatively little attention has been paid thus far to previous infectious diseases, and no regularly antecedent infection could be established for patients with E.N. The contention that the antecedent infection might be mild or inapparent was rather difficult to investigate and could only be tested serologically. We assumed that a persistent virus infection may be associated with hyperimmune humoral response, showing unusually high antibody titres, or with a weak immunity, permitting the persistence of virus and the evolution of a slow infection. Yet the screening of antibodies in sera from 35 patients with E.N. and 35 cases of lupus nephritis, as well as from 105 carefully selected healthy controls matched for age, sex and residence, yielded no consistent pattern of antibody to echovirus and adenovirus, herpesvirus hominis 1 and 2, ground squirrel cytomegalovirus, mumps, parainfluenza, respiratory syncytial, influenza A and B, Sindbis, West Nile, Hypr, and reovirus antigens.

Investigation for a possible agent of low-grade infectivity vertically transmitted, comprised screening by immuno-diffusion tests of cord sera of newborns from the endemic area, for raised IgM and IgA levels suggestive of prenatal infection. The non-specificity of this test makes it suitable for checking pre-

natal infections of unknown aetiology. However, this study did not disclose either any statistically significant difference of the incidence of infections.

Thus, evidence of viral aetiology in E.N. is still entirely morphological.

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RED-CELL DEFORMABILITY

SIR,—We were glad to be reminded of the observations of Dr Rampling and Dr Sirs (April 24, p. 905), the more so since their automatic recording centrifuge is not used, so far as we are aware, by other workers. Since 200 g, the deforming force to which red blood-cells are exposed to this technique, is many thousand times greater than the force acting on red cells during filtration or indeed anywhere in the normal or abnormal circulation, it is not altogether surprising that different factors govern their behaviour. The criticism offered by Dr Rampling and Dr Sirs of the filtration technique is more disappointing. They give one actual instance to illustrate the difficulty of interpreting results—namely, two papers which are said to report a correlation between red-cell flexibility and plasma-fibrinogen. One paper is still in the press: the other does not mention fibrinogen. This does not mean that the interpretation of filtration results presents no problems; but this is true of most techniques which aim at retaining some relevance to conditions prevailing in the circulation and therefore of potential clinical value.

The effect of fibrinogen on the overnight settling of red cells at 4°C is an interesting phenomenon not unfamiliar to us. From these and similar observations it might have been expected that fibrinogen would significantly affect deformability during filtration. It just happens that this is not so.

The observations of Dr Rampling and Dr Sirs are of great interest though not perhaps strictly relevant. They state that they cannot criticise our method because it has not been published: we did clearly state that a detailed description is shortly to be published in the *Journal of Clinical Pathology*.

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EFIM DAVIDOVICH

SIR,—We appeal to the medical profession to do your best to make the Soviet authorities grant Efim Davidovich permission to leave for Israel.

We appeal to doctors because Davidovich's case is not merely a violation of the right to emigration; he is dangerously ill. He has already had four thromboses and is now bedridden because of another. His doctors believe his illness to be caused by nervous overstrain: in 1972 Davidovich publicly declared anti-semitism to be the State policy in the U.S.S.R., and since then he has been living under continuous persecution, which became worse after his application for a visa.

For their refusal to give Davidovich permission to emigrate the authorities give the following reason: since he is a war veteran and was once a colonel in the Soviet Army, he may be used as a military specialist in Israel. The artificial nature of this explanation is obvious since Davidovich retired more than seven years ago. Keeping Davidovich in the U.S.S.R. is senseless and may cost him his life: there is no reason to hope that the atmosphere around Davidovich will get better and reduce the danger of a new thrombosis.

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