Sells: In discussion of Williams

K/Na ratio on biopsy of cortex, flushed, then ashed in HNO_3

Varied betw 0·2 & 0·7 in all kidneys which functioned 85

8 which did not function all below 0·2

Glasgow PRN — Fate of Partner Kidney

14 <
- 5 not used < 2 multiple arteries; 1 hypoplastic; 1 torn cap + 1 unknown
- 9 used < 7 functioned (6 went to second to be removed); 2 non function

For HLA compat no diff from the 2 sets contrs

" Antibodies no diff

No of blood units (not counting transfusions)

[illegible] for all controls (8.8 units ns) sig <0.005 but for matched controls (+ test 1.8 units) NS

Histology 13 — Infarction 4; Rejection 9

Antimortem thrombus not found in the infarcted

they also be ∴ from rejection.

Cardiff 16th July

MEETING OF THE BRITISH TRANSPLANTATION SOCIETY

16th April, 1975

THE ROYAL COLLEGE OF PHYSICIANS, REGENT'S PARK, LONDON, N.W.1

(See note below on nearest tube stations and special luncheon arrangements)

9.45 a.m. Introduction by **Sir Cyril Clarke, K.B.E., M.D., P.R.C.P., F.R.S.,** *(President, The Royal College of Physicians).*

9.50 a.m. **R. D. Gordon and Elizabeth Simpson** *(Clinical Research Centre, Harrow):*
'T cell mediated cellular memory responses to H-Y antigen.'

10.10 a.m. **M. Röllinghoff, K. Pfizenmaier, H. Trostmann and H. Wagner** *(Institute of Medical Microbiology, University of Mainz, Germany):*
'T cell proliferation in the MLC does not necessarily result in the generation of cytotoxic T-effector cells.'

10.30 a.m. **K. Pfizenmaier, H. Trostmann, M. Röllinghoff and H. Wagner** *(Institute of Medical Microbiology, University of Mainz, Germany):*
'Macrophage cytotoxicity induced in vitro: nonspecific activation of macrophages by a soluble factor derived from cytotoxic T lymphocytes (CTL).'

10.50 a.m. **H. Wagner, M. Röllinghoff** *(Institute of Medical Microbiology, University of Mainz, Germany):*
'Amplification of *in vitro* cytotoxic anti H-2 responses in the presence of Ia antigens.'

11.10 a.m. Coffee.

11.30 a.m. **J. W. Fabre and J. R. Batchelor** *(McIndoe Research Unit, Queen Victoria Hospital, East Grinstead):*
'Prevention of blood transfusion induced immunisation against transplantation antigens by treatment of the blood with antibody.'

11.50 a.m. **G. Williams, R. J. Hamshere and R. Shackman** *(Urology Unit, Royal Postgraduate Medical School, London):*
'The clinical assessment of a test of renal viability.'

12.10 p.m. **D. Gilmour, D. N. H. Hamilton and J. D. Briggs** *(Transplant Unit, Western Infirmary, Glasgow):*
'An analysis of primary non-function in transplanted kidneys.'

12.30 p.m. **J. E. Castro, A. D. Mee, G. D. Chisholm and R. Shackman** *(Urology and Transplant Unit, Postgraduate Medical School, London):*
'Kidneys from live donors.'

12.50 p.m. Lunch.

2.00 p.m. Business Meeting of the Society.

2.15 p.m. **J. Mertin and C. H. Meade** *(Transplantation Biology Group, Clinical Research Centre, Harrow):*
'Effect of polyunsaturated fatty acids (Pufa) on skin allograft survival and cytotoxic response in mice.'

2.35 p.m. **J. Ivanyi and P. M. Lydyard** *(Department of Experimental Immunobiology, Wellcome Research Laboratories, Beckenham):*
'Chimaerism of immunocompetent cells in allogeneic bone-marrow reconstituted lethally-irradiated chickens.'

2.55 p.m. **P. A. Hamilton Stewart and A. E. Thompson** *(St. Thomas's Hospital, London):*
'A new method for extracting lymphocytes from murine allografts.'

3.15 p.m. **R. F. M. Wood, P. R. F. Bell, Aileen C. Gray and W. C. Alston** *(The Department of Surgery, University of Leicester and Departments of Pathology and Biochemistry, The Western Infirmary, Glasgow):*
'Lymphocyte adenyl cyclase activity after canine renal transplantation.'

3.35 p.m. TEA.

4.00 p.m. **P. Dandona, M. Fox, M. M. Platts and P. Price** *(Royal Hospital, Sheffield):*
'Erythrocytosis following renal transplantation.'

4.20 p.m. **D. E. Osborn, J. E. Castro and R. Shackman** *(Urology and Transplant Unit, Royal Postgraduate Medical School, London):*
'Surgical treatment of renal artery stenosis in transplanted kidneys.'

4.40 p.m. **Betty Mosedale and M. A. Smith** *(Department of Biological Chemistry, Wellcome Research Laboratories, Beckenham):*
'Preparation of anti-human thymocyte serum without stem cell activity.'

5.00 p.m. **T. H. Dunningham, J. E. Castro and R. Shackman** *(Urology Unit, Royal Postgraduate Medical School, London):*
'Cytomegalic and herpes zoster infections in patients after renal transplantation.'

It is regretted that the meeting planned jointly with the French Transplantation Society for April 16th has had to be postponed at the request of the French Society. It is hoped to have the joint meeting at some future date.

Please note that the current meeting will be held at the Royal College of Physicians, 11 St. Andrew's Place, Regent's Park. Nearest tube stations: Regent's Park, Great Portland Street, Warren Street. **A buffet lunch has been arranged at the Royal College, and those wishing to avail themselves of this are asked to inform the General Secretary** (Prof. L. Brent, Department of Immunology, St. Mary's Hospital Medical School, London, W2 1PG) **not later than April 10th.** Cost: £1.50, student members: 90p. Those who have ordered lunch will be able to obtain a voucher, and make their payment, at the meeting. A bar will be available during the luncheon interval.

It is hoped that members and their guests will take advantage of this specially arranged luncheon service.

FUTURE MEETINGS

16th July, 1975—Meeting in Cardiff (Organiser—J. R. Salaman). Open papers. Guest Lecturer: Prof. P. Morris on 'Clinical kidney transplantation and enhancement'. Review of recent Histocompatibility Workshop by Dr. Heather Dick.

15th October, 1975—Autumn Meeting in London.

21st April, 1976—Spring Meeting in London.

The Spring Meeting of the British Society for Immunology will be held at the National Film Theatre, South Bank, London, S.E.1, on April 17th and 18th. Apart from open papers there will be a Symposium on "Adjuvanticity" on the 17th.

ABSTRACTS (not for publication)

R. D. Gordon and Elizabeth Simpson

Goldberg, *et al.*, 1972, have demonstrated cytotoxic antibody to H-Y antigen both in inbred strains which reject and in those which do not reject syngeneic male skin. Little, however, is known about cellular responses to H-Y antigen.

In vitro secondary cellular immune responses to H-Y antigen were studied in the C57B1/10 strain. Unseparated spleen cells or splenic T cells prepared by nylon wool filtration were obtained from females sensitized previously *in vivo* to H-Y antigen and were cultured in RPMI medium with equal numbers of irradiated syngeneic male spleen cells. After five days the cells were recovered and assayed for cytotoxic activity against chromium labelled syngeneic male or female target cells.

Following *in vitro* sensitization, unseparated female spleen cells demonstrated significant levels of cytotoxic activity against syngeneic male cells at effector to target cell ratios of 4:1 (20.9 corrected % lysis), 2:1 (12.0%) and 1:1 (8.1%). T cell preparations were equally effective (4:1 = 20.5%, 2:1 = 12.0%, 1:1 = 8.9%). Pretreatment of unseparated female cytotoxic cells with anti-theta antiserum and complement abolished cytotoxic activity. Cytotoxic activity was specific for male target cells; syngeneic female cells were not killed.

It is thus possible to demonstrate cytotoxic cellular memory responses *in vitro* to the weak antigen H-Y in a strain which responds relatively well to this antigen *in vivo*. Additional experiments to investigate cellular responses in strains which fail to respond to H-Y antigen *in vivo* are in progress.

Goldberg, E., Boyse, E. A., Scheid, M. and Bennett, D. (1972) Nat. New Biol., *238*, 55.

M. Röllinghoff, K. Pfizenmaier, H. Trostmann and H. Wagner

It was tested whether murine T lymphocytes, when stimulated *in vitro* by M-locus coded lymphocyte activating determinants (LAD), are able to mediate cytotoxic effector functions. The assay for cytotoxicity included both the use of purified LPS-blast target cells as well as the use of PHA dependent cytolysis as a model for detecting cytotoxic T lymphocytes (CTL). Although strong proliferative responses were obtained in the mixed lymphocyte culture, the T-cell blast generated did not display any detectable cytotoxic effector function. Thus, it is concluded that LAD at least in the M-locus dependent system do have the capacity to induce T cell proliferation but do not induce CTL.

K. Pfizenmaier, H. Trostmann, M. Röllinghoff and H. Wagner

Specific cytotoxic effector functions have been attributed to macrophages CTL and K cells in the presence of antibody coated target cells. We attempted to characterise *in vitro* specific cytotoxicity mediated by macrophages. Purified "immune" macrophages (separated by velocity sedimentation at 1 g and by adherence techniques from peritoneal cells obtained from CBA mice immunised against P815 ($H\text{-}2^d$) tumour cells) were tested for anti $H\text{-}2^d$ cytotoxicity. Specific cytotoxicity was only attributable to θ positive lymphocytes, macrophages were not cytotoxic. We then incubated *in vitro* activated anti $H\text{-}2^d$ CTL together with $H\text{-}2^d$ target cells (24 hours), collected the supernatant, incubated highly purified "normal" macrophages together with the supernatant ("arming" phase of macrophages) and tested such treated macrophages for cytotoxicity. The supernatant of CTL was capable of rendering macrophages cytotoxic. 60-90% lysis of the target cells was obtained. Surprisingly, macrophage mediated cytotoxicity was non-specific, that is target cells of different H-2 haplotype were lysed equally well. "Active" supernatant could also be obtained from mitogen induced T cell blasts, but not from B cell blasts. It thus appears that T cell activation per se, independent of the antigen used, will result in the production of the "macrophage activation" factor.

H. Wagner and M. Röllinghoff

The observation that surface Ig and Ia antigens cap independently allowed the use of an ATH anti-ATL serum combined with the indirect immunfluorescence technique to test defined murine cell populations of H-2^k haplotype for the presence of Ia antigens. Mitogen induced T and B cell derived blast cells, purified by velocity sedimentation at 1g, were tested for the expression of Ia^k antigens and then used both as stimulator cells and as target cells, both in primary and secondary *in vitro* cytotoxic allograft responses. Ia antigens were detected on 100% of LPS induced blast cells, on 20-30% of ConA blast cells (100% θ positive), but only to 5-10%, if at all, on PHA blasts (100% θ positive). Fibroblasts and nylon column purified splenic T cells were essentially Ia negative. Ia positive allogeneic stimulator cells induced a far stronger *in vitro* cytotoxic T cell response compared to Ia negative stimulator cells, that is, there was a correlation between the expression of Ia antigen (stimulator cells) and the magnitude of cytotoxicity induced. Ia antigens could not be detected as a target for killing in the cytotoxic effector phase, using both different target cells as well as the approach of "PHA dependent lysis" for detecting cytotoxic T lymphocytes.

J. W. Fabre and J. R. Batchelor

The most common source of exposure to foreign transplantation antigens in patients awaiting kidney transplantation is blood transfusion. In most transplant units, blood transfusions are kept to a minimum or given as leucocyte-poor blood in order to reduce the risk of sensitisation. We have examined the possibility of using antisera directed against the transplantation antigens of the blood as a means of preventing sensitisation. Our experiments were designed to test if this approach would prevent (a) the lymphocytotoxic antibody response to the blood and (b) its ability to sensitise to renal allografts. AS(Ag-B^1) rats injected intravenously with 1ml. of August (Ag-B^2) blood gave a strong primary (mainly IgM) and secondary (IgG) lymphocytotoxin response. If the August blood was mixed with AS anti August serum prior to injection, the lymphocytotoxin response was completely suppressed. Moreover, rats given the blood/antiserum mixture gave a primary IgM response on rechallenge with blood. Rats previously primed with blood had substantial but not complete suppression of the secondary response if the secondary stimulus was given as a blood/antiserum mixture. An AS anti Wistar (Ag-B^3) serum which showed only weak serological cross reaction with August lymphocytes could suppress the lymphocytotoxin response to August blood. A protocol of widely spaced injections of August blood was found to sensitise AS rats to (AS-August)F$_1$ renal allografts. If the blood injections were given as blood/antiserum mixtures were found to induce a slight degree of immunosuppression. The clinical application of this approach to preventing blood transfusion induced sensitisation is discussed.

G. Williams, R. J. Hamshere and R. Shackman

Thirty per cent of kidneys offered for transplantation in the United Kingdom fail to function. A simple reliable test of renal viability should eliminate those which are non-viable.

We have evaluated the uptake of I^{125} iodohippurate by kidney slices as an index of viability in a previous report to this Society.

Pyramidal shaped biopsies were taken from the renal cortex of cadaver donor kidneys with a special biopsy tool. Slices of the biopsies were incubated with I^{125} iodohippurate in an oxygenated buffered medium. After incubation for one hour the radioactivity per G kidney tissue and per G medium was determined and the ratio between the two values was calculated and designated the S.M. (Slice/Medium) ratio.

Eight human kidneys studied to date have shown S.M. ratios ranging from 1.05 to 7.5. Two kidneys with S.M. ratios less than two did not function whereas six with S.M. ratios greater than 3.6 functioned well. Preliminary results suggest that the test may be useful in predicting renal viability.

[1] Bristol Organ Matching Report, 1973.

D. Gilmour, D. N. H. Hamilton and J. D. Briggs

About 15% of cadaveric kidneys transplanted in Britain never function. The failure has been attributed to ischaemic damage (Baxby, *et al.*, 1974). In our unit, the incidence of primary non-function (P.N.F.) has steadily risen during the past three years of the six-year programme without any major change in management policy. The incidence of P.N.F. during the first three years was zero, and during the past three years has been 8%, 25% and 35% respectively.

No correlation has been found between the incidence of P.N.F. and any of the following factors: warm and cold ischaemic times, donor pre-mortem blood pressure and renal function, donor age and cause of death, pre-treatment, HL-A compatibility and the presence of cytotoxic antibodies.

Histological examination of the 14 P.N.F. kidneys after removal and of biopsy samples showed widespread ischaemic damage in only four cases. The remainder showed changes of severe rejection. This, together with the finding commonly of good function in the donor kidney's partner, suggests that acute rejection is the main cause of P.N.F. in our series. The possible causes of this marked increase in P.N.F. will be discussed, in particular in relation to blood transfusion policy.

Baxby, K., Taylor, R. M. R., Anderson, M., Johnson, R. W. G., Swinney, J. (1974) Lancet *2*, 977.

J. E. Castro, A. D. Mee, G. D. Chisholm and R. Shackman

There is good evidence that the best results of kidney transplantation are achieved when live related donors are used. The purpose of this investigation was to study the complications and effects of live donor nephrectomy.

Use of live donors was instituted at Hammersmith in 1961 and 55/187 kidney transplantations were performed using live donors, 6/55 cases were living unrelated donors and the remaining 49 were from living related donors. The youngest donor was 18 years and the oldest 70 years.

No patient undergoing donor nephrectomy has died. Time spent in hospital ranged from 8-33 days (mean 13) and time off work ranged from 3-24 weeks (mean 8). Seventeen patients had a total of 21 post-operative complications which were minor in nature and all were successfully managed.

Thirty of the donors were recently fully assessed, only one had a degree of ill-health which is vestibular dysfunction due to post-operative streptomycin. The blood urea of these patients ranged from 24-53 mg/100 ml. (mean 35). The M.S.U. was sterile in all cases and chemical testing of urine normal.

Whilst each individual case must be considered with care our results suggest that donor nephrectomy is safe and accompanied by minimal morbidity.

J. Mertin and C. H. Meade

The effect of PUFA on cell-mediated immunity has been studied *in vivo*. Linoleic, linolenic and arachidonic acid, injected subcutaneously, were found to prolong skin allograft survival in mice. Arachidonic acid was more effective than linoleic, and this observation parallels *in vitro* results in man described recently (Mertin and Hughes, 1975). Linoleic acid not only prolonged first set but also second set allograft survival, but prolongation of the latter required smaller doses of the substance.

The cytotoxicity *in vitro* of spleen cells of mice immunised either by skin allograft or by intraperitoneal injection of allogeneic tumour cells was measured by a chromium release assay. In several experiments, linoleic acid treatment of the animals caused depression of primary and secondary cytotoxic response.

In dietetic experiments, skin allograft survival time in mice given a PUFA deficient diet was shortened when compared with animals fed with a normal control diet.

The results, indicating an inhibition of cellular immune response by high and immunopotentiation by low PUFA serum levels, support our hypothesis of an immuno-regulatory function of the essential fatty acids tested.

Mertin, J. and Hughes, D. (1975). Int. Arch. Allergy (in press).

J. Ivanyi and P. M. Lydyard

Injection of parental bone marrow cells into 12-day old lethally-irradiated F1 hybrid chickens resulted in chimaerism of donor-type GVH reactive cells and suppression of anti-SRBC antibody response. These manifestations of a chronic GVHR were prevented by pretreatment of the donor marrow with specific anti-T cell globulin. In some chimaeras donor type GVH reactive cells developed gradually from T cell precursors of donor origin.

Transplantation of spleen and marrow cells from SRBC-primed F1 hybrid donors into lethally irradiated parental recipients resulted in the loss of memory potential within one-two weeks of transfer while donor type IgG allotype synthesis was preserved. Injection of goat anti-chicken thymocyte serum to recipients one day prior to reconstitution enabled the antibody response of memory cells at one-two weeks, although it failed to prevent their rejection by eight-nine weeks after transplantation. Split-chimaerism of donor-type GVH-reactive cells was demonstrated in chickens which have previously rejected the B cells derived from the same graft.

P. A. Hamilton Stewart and A. E. Thompson

The extraction of lymphocytes from organ allografts is difficult due to their deep and diffuse position.

A histological technique capable of counting lymphocytes in allografts has been described at a previous meeting of this Society.

A method is presented in which lymphocytes accumulate superficially in an allograft thereby facilitating their extraction and enumeration. A slice of donor renal cortex, was inserted beneath the renal capsule of the recipient with its decapsulated surface touching the recipient's cortex. A band of lymphocytes formed in the junctional zone of the graft. Circumcision of the recipient capsule around the graft isolated the graft from the recipient cortex.

Trypsin digestion plus machine shaking extracted the lymphocytes from the isolated graft, leaving only a small lymphocyte residue.

The lymphocyte yield from each of the 200 grafts was counted in a haemocytometer chamber.

Analysis of the results showed:—

1. A negligible yield with isografts and heated allografts.
2. That the lymphocyte yield depended upon thickness, trauma applied, sex and donor/recipient relationships.
3. A marked decrease in yield without trypsin.
4. A typical immune response with allografts, reaching a peak at seven days then rapidly declining.

An attempt has been made to quantitate the allograft reaction. A method of extracting large numbers of lymphocytes from allografts is presented by which identification of the different types of lymphocytes, involved in the allograft reaction, is possible.

Neat + simple technique - might be useful as a test system

R. F. M. Wood, P. R. F. Bell, Aileen C. Gray and W. C. Alston

Adenyl cyclase has been shown to have an important role as a "second messenger" in the immune system (Watts, 1971). This study was undertaken to investigate changes in lymphocyte adenyl cyclase activity (LACA) after renal transplantation. Kidney grafts were exchanged between two pairs of mongrel dogs. One pair of dogs received no immunosuppression while the other two animals were given azathioprine and prednisolone. Serum creatinine and blood urea were measured daily and serial estimations of LACA were made.

In both the non-immunosuppressed dogs there was a well-defined rise in LACA on the 4th and 5th post-operative days, levels then fell to around pre-operative values. In the immunosuppressed animals, both rejecting more than ten days after transplantation, increases in LACA occurred later and reached higher peaks than in the non-immunosuppressed dogs. In one dog increased LACA occurred immediately before rejection and in the other dog raised levels coincided with rejection. In all four animals raised LACA could be interpreted as indicating the development of a population of lymphoblasts directed against the graft. It is concluded that adenyl cyclase may have a significant role in the induction of the immune response in acute allograft rejection.

Watts, H. G. (1971). Transplantation, *12*, 229.

Tea

P. Brandona, M. Fox, M. M. Platts and P. Price

Erythrocytosis has been reported as a relatively uncommon problem following renal transplantation (Wu *et al.*, 1973). The incidence appeared considerably higher in the Sheffield cases, and 42 patients (33 males and nine females) currently attending the transplantation follow up clinic were therefore investigated. Eighteen males and seven female patients had creatinine clearances greater than 50 ml/mt. and of these 13 males (72%) and seven females (77%) had haemoglobin concentrations greater than 18 gm/dl (range: 18 to 26 gm) and 16 gm/dl (range: 17.0 to 19.5 gm) respectively. Total red cell volume and/or mass was raised in all patients in whom it was measured. In a follow up of up to five years no complete transplant rejections, thromboembolic complications attributable to erythrocytosis or deaths occurred, although the incidence of hypertension in this group was greater than that in the rest.

Following transplantation, the rise in haemoglobin parallelled the increase in creatinine clearance, and erythrocytosis took 110 to 500 days to develop. The incidence of transient transplant rejections or the total dose of steroids administered was not greater in these patients than that in the rest; however, the haemoglobin concentrations at the time of transplantation were significantly higher in this group than that in others.

The remarkably high incidence of erythrocytosis in patients with well functioning renal transplants (74%) suggests that the feedback mechanism regulating the haemoglobin concentrations may be abnormal as in a parallel study during the period of early rise of haemoglobin, plasma erythropoietin levels were found not to be significantly elevated.

Wu *et al.* (1973) Arch. Int. Med., *132*, 898.

D. E. Osborn, J. E. Castro and R. Shackman

Surgical correction of renal artery stenosis developing in transplanted kidneys has been undertaken in nine patients. In eight, the kidneys were from cadaveric donors and in one the donor was a sibling. End to end anastomoses with the recipients' internal iliac arteries were done in all cases. Five of the donor kidneys were flushed and temporarily stored at 4°C, two were perfused on the Ab Gambro machine.

The mean age of the donors was 18 years (range 8—34) and the mean age of the recipients 27 years (range 17—30). All the kidneys functioned well. In three mild antihypertensive therapy was prescribed when the patients were discharged from the ward.

Poorly controlled hypertension was subsequently noted in the nine patients and this was accompanied by deteriorating renal function in five. A bruit was heard over the kidney in six cases.

Angiographic confirmation of the stenosis was obtained in all cases at 6-107 weeks: in the majority it was within 30 weeks of the transplantation. The stenosis, assessed by measuring the vessels on the radiograph, ranged from 14-50% of the respective donor renal arteries.

Excision of the stenosis with end to end re-anastomosis was undertaken in four patients. Venous bypass grafts were used in four. A dacron graft was used in one. In five of the patients the results were good. In the remaining four the operations failed from thrombosis of the renal artery in three and thrombosis of the vein graft in one.

The aetiology of the renal artery stenosis remains obscure. The longest survivor after surgical correction is seven years.

Betty Mosedale and M. A. Smith

GVH disease is the major obstacle to successful bone marrow transplantation in man. Attempts have been made to overcome the GVH reaction by inactivation of the immunocompetent T-cells by treating the bone marrow *in vitro* with rabbit anti-thymocyte serum (ATS). ATS with high anti-T cell activity has been prepared. Anti-T cell *in vitro* tests include rosette inhibition, cytotoxicity for T-cells, binding to T-cells as measured by immunofluorescene, and opsonisation. The ATS, however, also inhibits colony formation by human bone marrow cells in agar cultures *in vitro*. Inhibition may be due to anti-stem cell factor.

The anti-stem cell activity has been absorbed out with human foetal liver cells, leaving ATS which is still active against T-cells. Reduction in anti-stem cell factor has also been obtained by fractionation of the ATS to gamma globulin (ATG).

This ATS or ATG, if used *in vitro* with bone marrow grafts, should inactivate T-cells before transplantation into man. GVH disease following bone marrow transplantation might thus be prevented.

T. H. Dunningham, J. E. Castro and R. Shackman

The increased susceptibility of immunosuppressed patients to virus infections is well known[1] and it has been suggested that such infections may be associated with rejection of transplanted allografts[2]. We therefore carried out a retrospective survey of cytomegalovirus and Herpes zoster infections in 174 of our kidney transplant recipients to determine the relationship between virus infection and rejection of the graft.

Ten patients (6.8%) had evidence of cytomegalovirus infection. In no case was there a clear association between the infection and graft rejection. In three cases the cytomegalovirus infection occurred within one month of increased immunosuppression. In the remaining seven, infection was not associated with recent changes of immunosuppressive therapy.

Eight patients (5.4%) had evidence of Herpes zoster; two of these were soon after transplantation and they were associated with acute rejection. In six cases infection was not associated with changes of immunosuppressive therapy; but two had evidence of late chronic rejection. Four patients had good, stable renal function at the time of infection.

These findings confirm the high incidence of virus infection in patients on immunosuppression; but an association between these virus infections and graft rejection was not found.

[1] Rifkind, D. Arch. Int. Med., 116, 554, 1965.

[2] Lopez, C. Transplantation Proceedings, Vol. V., No. 1 (March), 1973, p.803.

AGENDA FOR BUSINESS MEETING

TO BE HELD ON WEDNESDAY, 16TH APRIL, 1975, AT 2 P.M.

1. Minutes of Annual Business Meeting held on October 16th, 1974 (see below).

2. Matters arising from the Minutes.

3. Election of new members.
   The applicants listed below have been considered by the Committee and they are recommended for approval.

4. Resignations: D. G. Chalmers, S. Clarke, R. C. L. Feneley, M. F. Greaves, M. H. Lessof and R. Shackman.

5. Report on "The Shortage of Organs for Clinical Transplantation: Document for Discussion"—progress report.

6. Any other business.

MINUTES OF ANNUAL BUSINESS MEETING

HELD ON OCTOBER 16TH, 1974

R. Y. Calne was in the Chair

About 40 members attended.

1. Apologies for absence were received from Sir Peter Medawar and other members.

2. The Minutes of the Business Meeting held on April 17th, 1974, were approved.

3. *Arising from the Minutes.*
   The General Secretary reported that the Committee had found it necessary to postpone the Workshop on "Mechanisms of tissue damage in transplants", which it had been intended to hold in the afternoon. It had been replaced by a discussion of the report from the Sub-committee on "Donor Supply".

4. *Elections.*
   The following were duly elected:

General Secretary:	L. Brent
Meetings Secretary:	A. D. Barnes
Committee Members:	J. R. Batchelor
	P. R. F. Bell
	Elizabeth Simpson

5. *Retirement from Committee.*
   P. B. Medawar, who had been the Committee Chairman, R. Y. Calne and E. M. Lance were thanked for their invaluable work.

6. Eleven new members were elected; the resignation of two members was noted.

7. *Finance.*
   The Treasurer presented a statement on the finances of the Society, as well as a list of firms that had declined to support the recent appeal for funds. He urged members with contacts in these firms to use their influence. Thanks to the assistance the Society had received from industry the Society was solvent. The problem of the joint subscription with the B.S.I. of £5, of which the Society received only £2, had nevertheless remained a bone of contention and the Committee proposed that it should be discontinued forthwith. With a single subscription of £3 the Society's income would be boosted by almost £150 p.a. The Committee of the B.S.I. had approved this suggestion, and its acceptance certainly did not mean that the Society had ceased to value its close association with the B.S.I.
   The proposal of a single subscription of £3 was approved.

8. *Sub-committee on Donor Supply.*
   R. Y. Calne, Chairman of the Sub-committee, reported briefly on his committee's activities. A full report would be discussed in the afternoon session. The Sub-committee was thanked for its work and the General Secretary undertook to write to its members.

9. *Biological Council.*
   The Committee's suggestion that the Society should affiliate to the Biological Council was accepted.