SERODIAGNOSIS OF ALLOGRAFT REJECTION IN RABBITS TREATED WITH CORTISONE

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WHEN AN ANIMAL receives a skin allograft and no steps are taken to prevent rejection, serum antibodies usually occur but their detection characteristically lags allograft destruction by days or weeks. Little is known, however, about the characteristics of the serum antibody response to skin allografts when rejection has been delayed. This study explored the possibility that this lag period, so characteristic of unmodified rejection, would be shortened or eliminated if rejection were delayed.

Thirteen rabbits received skin allografts and were treated with methyl-prednisolone.* Serum histocompatibility antibodies were studied by the antiglobulin consumption test (ACT). This method detects transplantation antibodies regularly after a single allograft, and the lag phase of unmodified rejection is shorter with this method than it is with others.

In 3 animals rejection was not delayed and antibodies appeared after the usual lag period.

Six animals died from complications of drug therapy after an average of 25 days with healthy grafts. None had detectable antibodies.

Four animals rejected grafts after an average of 25 days and all had antibodies detectable 24 to 48 hr. prior to visible graft destruction.

Animals in which rejection was not delayed did not have detectable serum antibodies at the time of rejection. Delayed rejection did not occur in the absence of detectable antibodies, nor were antibodies detectable in the absence of rejection. It appears that the lag period between rejection and the appearance of serum antibodies is greatly reduced by steroid therapy.

The fact that the lag period is shortened indicates immunosuppression by methyl-prednisolone does not prevent the immunologically competent cell from becoming sensitized to allograft antigens. Presumably the drug interferes with antibody production at a later stage. Probably, it either prevents the sensitized cell from releasing antibody, or it prevents the sensitized cell from dividing to produce large numbers of antibody producing cells. Consequently, since the im-

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