

Review on Overview of Mycophenolate Mofetil

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Abstract: Mycophenolate mofetil (MMF, CellCept®) serves as a prodrug for mycophenolic acid (MPA), an inhibitor of inosine monophosphate dehydrogenase (IMPDH), the key enzyme in guanosine nucleotide de novo synthesis. T- and B-lymphocytes rely more on this pathway than other cell types. Notably, MPA strongly inhibits the type II isoform of IMPDH in activated lymphocytes, making it more cytostatic for lymphocytes than other cells. This mechanism underlies MPA's potent immunosuppressive effects. CellCept® dampens T-lymphocytic responses to allogeneic cells and antigens. It inhibits primary antibody responses but not secondary ones. The effectiveness of regimens with CellCept® for preventing allograft rejection and treating rejection is well-established. CellCept® demonstrates efficacy in various experimental animal models of chronic rejection, raising hopes for similar effects in humans. Mycophenolate mofetil, an ester prodrug of the active immunosuppressant mycophenolic acid, acts as a noncompetitive, selective, and reversible inhibitor of inosine monophosphate dehydrogenase. This enzyme is crucial in the de novo synthesis of guanosine nucleotides within T and B lymphocytes. The compound, whether as mycophenolate mofetil or mycophenolic acid, hinders lymphocyte proliferation and the generation of antibodies triggered by various mitogens and antigens. Additionally, mycophenolate mofetil exhibits activity in numerous animal transplantation models, indicating a potential role in inhibiting the chronic rejection process.

Keywords: tacrolimus, liver transplantation, efficacy, immunosuppression

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