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Transport of folate compounds through  
the membrane of normal and transport-  
deficient lymphoid cells.

The active transport of folic acid  
(FA) 5-methyltetrahydrofolate (5-MeFH4)  
and methotrexate (MTX) was investigated  
in mouse leukemia L 1210 and in a human  
lymphoid cultured cell line. In both  
cell types exist two different trans-  
port systems, one for 5-MeFH4 which  
transports also MTX and one for FA which  
is much less effective. The first system  
can be inhibited by blocking sulfhydryl  
groups in the membrane with organic  
mercurial compounds. But no SH-groups  
seem to be involved in the transport of  
FA. Iodoacetate, however, leads to an  
increased total uptake of MTX. Resistan-  
ce to MTX can be due to decreased up-  
take of the folate antagonist. A cell  
strain with impaired transport of MTX  
takes also up less 5-MeFH4, where as  
the transport of FA is not decreased.  
Competition experiments show that foli-  
nic acid shares the transport system  
with MTX and 5-MeFH4. This system seems  
to be the important pathway for the up-  
take of folate and antifolate compounds  
into these cells, while FA is probably  
taken up by a much less specific system.

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Malades, Paris, France. Renal transplantation  
in children. First year experience.

14 children, 5 to 14 years old, received ca-  
daveric renal kidneys during 1973. Donors were  
2 to 41 years old. Kidney size was greater than  
normal for the recipient in 9 cases, less in 3  
cases, and equivalent in 2 cases. When too lar-  
ge to be placed in the pelvis, the kidney was  
placed in a paravertebral position. Uretero-  
ureteral anastomosis was performed in most ca-  
ses. Treatment was Azathioprine and corticothe-  
rapy. High doses of Furosemide (10 mg/kg) du-  
ring operation prevented ischemic acute renal  
failure, despite cold ischemia as long 23 hours.  
One child died after 1 week from intracerebral  
hemorrhage due to severe hypertension. A second  
died after 5 weeks from a diffuse hemorrhagic  
syndrome. Primary thrombosis of the kidney ve-  
ssels led to transplantectomy in 1 case. Kidney  
function is normal in 9 cases, chronic rejec-  
tion is present in 2. No urologic complications  
were observed. Hypertension developed in half  
of the children. One case was associated with  
renal artery stenosis, another with chronic re-  
jection. Hypertension was more frequent in tho-  
se who had severe hypertension, leading to bine-  
phrectomy, before transplantation. No correla-  
tion was found between occurrence of hyperten-  
sion and kidney size. Although follow-up is too  
short, growth appears possible in prepubertal  
children, when steroid doses are low. Rehabil-  
itation was total within 3 months in 10 cases.  
Cadaveric kidney transplantation seems to be a  
valuable therapeutic procedure in children with  
chronic renal failure.

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The concentrations of immunoglobulins and  
complement components in the sera of children  
with glomerular disease.

Various complement components are estimated  
in the sera of patients with renal disease for  
the purposes of diagnosis and investigation.  
Deviation from normality may reflect involve-  
ment in the pathogenetic process, or may be a  
secondary consequence of proteinuria. We have  
therefore systematically measured plasma C1q,  
C4, C3, GBG, IgG (and specifically subclass 3),  
IgA and IgM, and have related them to the  
plasma concentration of albumin and to the  
urine albumin/creatinine concentration ratio.

GBG correlates positively with the plasma  
albumin concentration, and negatively with the  
urine albumin/creatinine ratio, indicating that  
its serum concentration is affected by urinary  
loss. Plasma IgG, but not IgG subclass 3,  
correlates positively with plasma albumin,  
indicating a different clearance and/or  
turnover rate of IgG3 from other IgG  
subclasses.

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by H.Bickel). Univ. Children's Hospital,  
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Complement studies in nephrotoxic  
serum nephritis (NSN) and aminonucleo-  
side nephrosis (AN) of the rat.

Total complement (CH50) and C1-C9  
have been determined in sera and urines  
of rats with NSN and AN. In NSN, 3 hrs.  
after injection of antiserum, a signifi-  
cant drop of CH50 and C1-C8 in serum  
was observed, whereas C9 remained nor-  
mal. At day 12 CH50 and the complement  
factors were normal except C1, which  
was still slightly diminished. In urine,  
at day 1 only C8 and C9, at day 12  
small amounts of C1, C4, C8 and C9 and,  
less frequently, of C3-C7 could be mea-  
sured. In AN, at day 12 CH50 and C1-C9  
were strikingly diminished in serum. In  
urine, at day 12 C3, C5, C7, C8 and C9  
could be determined regularly, whereas  
urinary excretion of C1, C4, C2 and C6  
was observed in about 50% of the ani-  
mals. In NSN, the consumption of comple-  
ment in serum reflects the ongoing im-  
munological process. The low clearances  
of complement components, compared to  
AN, may be due to their fixation and in-  
activation in the kidney. In AN, the re-  
duction of complement in serum may be  
the result of loss of complement factors  
in oedema, ascites and urine, and/or of  
impaired synthesis of these proteins.