PLASMAPHERESIS IN SOME OTHER DISEASES

Many of infectious diseases are accompanied by considerable intoxication, which determines the gravity of the condition, constitutes the main mechanism of thanatogenesis and influence upon the general outcome of the disease.

Aside from bacterial endo- and exotoxins, also possess toxicity products of inflammation and tissular destruction, proceeding from the foci of inflammation.

However, also after liquidated the main manifestations of infection a considerable amount of toxic substances remains in blood, obstructing postinfectious rehabilitation of patients.

### INDICATIONS
- Acute period of the disease in viral hepatitis, leptospirosis, diphtheria, botulism, typhus- paratyphous infection, tick-borne encephalitis
- Period of rehabilitation after diphtheria, hepatitis

### CONTRAINDICATIONS
- Common for efferent therapy

### CRITERIA OF EFFICIENCY
- Reduction of the degree of exo- and endotoxicosis
- Normalization of clinical-laboratory indicators
- Stabilization of immune status

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## PLASMAPHERESIS IN EYE DISEASES

What plays an essential role in the pathogenesis of many eye diseases are the autoimmune mechanisms or accumulation of toxic substances, leading to affection of vessels or nerves, which requires application of efferent therapy.

<table>
<thead>
<tr>
<th>INDICATIONS</th>
<th>CONTRAINDICATIONS</th>
<th>CRITERIA OF EFFICIENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panuveitis</td>
<td></td>
<td>✓ Reduction of the content of the main pathogenic factors (autoantibodies, immune complexes, toxic substances etc.)</td>
</tr>
<tr>
<td>Infectious endophthalmitis</td>
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<tr>
<td>Autoimmune ophthalmoplegia</td>
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<tr>
<td>Toxic neuritis of the optic nerve</td>
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<tr>
<td>Thrombosis of the central venous retina</td>
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<tr>
<td>Sympathetic ophthalmia</td>
<td></td>
<td>✓ Inverse development or regression of the main manifestations of the diseases, improvement of the acuity of vision</td>
</tr>
</tbody>
</table>

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PLASMAPHERESIS IN SOME OTHER DISEASES

<table>
<thead>
<tr>
<th>PLASMAPHERESIS IN THE SJOGREN’S SYNDROME</th>
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</table>

This is an autoimmune affection of salivary glands with appearance of dryness in the mouth. Quite often, the disease runs with more extensive affection of the glandular apparatus with appearance not only of xerostomia, but also of xerophthalmia, keratoconjunctivitis, chronic parenchymatous parotitis, hyposcretor gastritis, chronic cholecystopancreatitis, colitis, glomerulonephritis, interstitial “pneumonitis”, arthralgias and myalgias, cryoglobulinemia.

The plasmapheresis (PA) procedure is aimed at removing autoantibodies and immune complexes - the main pathogenetic factors of the disease.

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<th>CRITERIA OF EFFICIENCY</th>
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</thead>
<tbody>
<tr>
<td>➢ Principal clinical manifestations of the disease (xerostomia, xerophthalmia, keratoconjunctivitis)</td>
<td>➢ Common for efferent therapy</td>
<td>✓ Improvement of the general condition</td>
</tr>
<tr>
<td>➢ Other concomitant systemic affections (glomerulonephritis, interstitial “pneumonitis”, arthralgias and myalgias, Raynaud’s disease, cryoglobulinemia and others.)</td>
<td></td>
<td>✓ Increase of salivation</td>
</tr>
</tbody>
</table>

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# Plasmapheresis in Some Other Diseases

## Plasmapheresis in Diseases of the Thyroid Gland

The main cause of development of autoimmune thyroiditis (the Hashimoto’s goiter) is the accumulation of autoantibodies (the microsomal ones or to thyreoglobulin), accompanied by appearance of immune inflammation in the gland with initial excitation of its function and thyreotoxicosis with the following suppression of the function and development of persistent hypothyreosis.

Autoimmune mechanisms are also tracked in the pathogenesis of diffuse toxic goiter with stimulating influence of autoantibodies upon the synthesis of thyreoid hormones.

## Indications

- Autoimmune thyreoiditis (Hashimoto’s goiter)
- Thyreotoxicosis before the operation
- Thyreotoxic crisis after the operation
- Hypothyreosis
- Exophthalmos (Graves ophthalmopathy)

## Contraindications

- Common for efferent therapy

## Criteria of Efficiency

- Reduction of the degree of thyreotoxicosis
- Reduction of the content of autoantibodies and immune complexes in blood
- Reduction of the degree of exophthalmos in Graves ophthalmopathy
PLASMAPHERESIS IN SOME OTHER DISEASES

### PLASMAPHERESIS IN DIABETES MELLITUS

The autoimmune mechanism is typical of the development of diabetes mellitus of the I type, what constitutes an indication for applying methods of plasmapheresis.

Alterations of lipid metabolism in diabetes mellitus (DM) of the II type bring about a quick development of atherosclerosis and its complications in this category of patients. The most frequent variant of dyslipidemia under DM is the increase of the level of triglycerids, low-density lipoproteids (LDL) and reduction of the concentration of high-density lipoproteids (HDL) - the lipid triad, which is atherogenic, regardless of the level of increasing of total cholesterol, and the increase of the concentration of lipoprotein (a), LP(a), brings about else faster progression of atherosclerosis with development of complications and thrombosis. Most of the patients with atherogenic dyslipidemia are insulin-resistant.

A wide introduction in practice of extracorporeal methods of treatment, which allow to:

- remove lipoproteids from blood bed
- improve the rheology and microcirculation of blood
- raise the sensitivity of the organism to medicinal, including sugar-lowering, preparations
- overcome insulin resistance

Extracorporeal methods permits to use these methods of treatment with pronounced effect in patients with DM of the II type presenting alterations of lipid metabolism. The most severe complications, requiring prophylaxis and treatments, are diabetic retinopathy, nephropathy, neuropathy, diabetic foot.

The methods of treatment which a most widely applied here are plasmapheresis (PA), cascade plasma filtration (CPF) and heparin - ELP precipitation (HELP).

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</thead>
<tbody>
<tr>
<td>Breaches of lipid metabolism resistant to medicinal hypolipidemic therapy, particularly under pronounced hypertriglyceridemia, increase of LP(a) and hypoalphacholesterolinemia, accompanied by hyperviscosity and insulin-resistance</td>
<td>Unstability of hemodynamics, cardiac insufficiency Internal bleeding Allergy to the components of the procedure</td>
<td>✔ Reduction of the degree of revelation of the main clinical manifestations of above specified complications of diabetes mellitus ✔ Correction of the breaches of lipid metabolism, elimination of hyperviscosity, of microcirculation disorders, of insulin-resistance with normalization of the level of glucose of the blood ✔ Improvement of perfusion ability of the tissues, healing of cankers in a patient with diabetic foot ✔ Under long using of the PA methods, stabilization and/or regression of atherosclerotic plaques as per data of USDG or angiography</td>
</tr>
<tr>
<td>Presence of autoantibodies in patients with diabetes mellitus of the I type</td>
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<td>Diabetic retinopathy</td>
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<tr>
<td>Diabetic nephropathy</td>
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<tr>
<td>Diabetic polyneuropathy</td>
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<tr>
<td>Diabetic foot and other disturbances of blood circulation</td>
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### PLASMAPHERESIS IN RHEUMATOID ARTHRITIS

Plasmapheresis (PA) is used in a combined treatment of patients with rheumatoid arthritis (RA) in the period of exacerbation.

#### INDICATIONS
- Reduction of activity of the inflammatory process.
- Reduction of the level of raised concentration of Ig, CIC and rheumatoid tests.
- Reduction of the pain syndrome and morning stiffness in the patient.
- Improvement of microcirculation of the blood.
- Reduction of the dose of corticosteroid and other medicamentous preparations.
- Increase of sensitivity to pharmacotherapy.
- When passing from one basic preparation to another.

#### CONTRAINDICATIONS
- Improvement of clinical-laboratory indicators.
- Normalization of the amount of CIC, the indicators of activity of the disease and reduction of the level of Ig.
- Increase of efficiency of the basic reamins of treatment.

#### CRITERIA OF EFFICIENCY
- Improvement of clinical-laboratory indicators.
- Normalization of the amount of CIC, the indicators of activity of the disease and reduction of the level of Ig.
- Increase of efficiency of the basic reamins of treatment.
The application of plasmapheresis (PA) in patients with chronic diffuse diseases of the liver (chronic active hepatitis and cirrhosis of liver) can be realized:

a) on urgent Indications - development of hepatic precoma and coma with increasing phenomena of encephalopathy, resistant to the intensive imedicamentous and infusion-transfusion treatment applied;

b) on planned Indications - under increasing hepatic insufficiency (phenomena of endotoxicosis with increase of the content of bilirubin, aminotransferases, alkaline phosphatase, urea, average mass molecules, circulating immune complexes, immunoglobulins in blood; skin itch; hemorrhagic syndrome) in absence or insignificant efficiency of traditional therapy (vitamins B6 and B12, panangin, lipoic acid, glutaminic acid, cocarboxylase, sirepar, essenciale, detoxication infusion and diuretic preparations, corticosteroids).

**INDICATIONS**

- Hepatic coma or precoma with manifestations of encephalopathy
- Endotoxicosis due to removal of a considerable amount of bilirubin, specific ferments, circulating immune complexes and etc
- Pathology of humoral and cellular hemostasis

**CONTRAINDICATIONS**

- Recovery from hepatic coma or precoma with reduction of the phenomena of encephalopathy
- Reduction of the jaundice, skin itch, hemorrhagic syndrome, improvement of the general condition
- Reduction of the level of the necessary medicamentous support
- Reduction of the level of earlier raised biochemical indicators

**CRITERIA OF EFFICIENCY**

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