DERMATOLOGIC EMERGENCIES

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The skin is the largest human organ, performing a number of irreplaceable functions. Significantly affects the overall health and quality of life of a person. It is a "window" or "screen" and reflects what is happening inside the body [1]. In dermatological practice, some diseases are classified as emergency conditions. In some of them, the skin is the main organ affected (eg, pemphigus vulgaris, Lyell's syndrome), in others, skin lesions are an important diagnostic feature of the underlying disease (eg, meningococcemia). It is very important to recognize skin rashes in emergency conditions, which in the acute period can end in death [2,3].

Objectives: Identify clinical clues to the diagnosis of potentially life-threatening dermatologic conditions; describe the clinical presentation of important dermatologic emergencies; discuss infectious and pharmacologic causes of life-threatening dermatoses.

The main groups of urgent dermatovenereological conditions: vesiculobullous disorders (eg, Stevens-Johnson syndrome, toxic epidermal necrolysis, pemphigus vulgaris); infections; autoimmune disorders (eg, acute rashes in systemic lupus erythematosus, juvenile rheumatoid arthritis); inflammatory skin diseases (eg, desquamative erythroderma, acute pustular psoriasis, acute drug-induced toxidermia); painful conditions caused by external influences (for example, heat stroke, electric shock, effects of child abuse) [1,2,4,5].

Clues for a potential dermatological emergency: fever and rash, fever and blisters or denuding skin, rash in immunocompromised, palpable purpura, "full body redness". Mortality rate for skin infections and manifestations of infections on the skin: necrotizing soft tissue infections - 25%; clostridium - 38%; meningococcemia - 20%; herpetic eczema - 5-9%; herpes of newborns - 40%; staphylococcal scalded skin syndrome: children - 3%; adults - 50% [1,4].

Staphylococcal scalded skin syndrome is observed in children (usually up to 5 years), rarely in adults with renal insufficiency. It is caused by a special staphylococcus toxin of the phage group II, phage type 71 and called exfoliatin. This toxin causes exfoliation of the epidermis directly below the granular layer of the epidermis. Mortality is 3% in children, >50% in adults. Dermatologic findings: erythema on the face around the mouth, eyes, neck, axilla and groin. Then generalized within 48 hours as the color deepens, skin fragility increases, flaccid bullae appear, positive Nikolsky sign. After opening the blisters, the skin takes on the appearance of scalded or burned. Within 1-2 days, flexural areas begin to slough off. Severe lesions of the mucous membranes are not observed. Complete re-epithelialization after 1-2 weeks.

Necrotizing fasciitis is necrosis of subcutaneous tissue due to infection. Etiology: type I – mixed anaerobes, gram negative aerobic bacilli and enterococci; type II – group A streptococci. Risk factors: diabetes, peripheral vascular disease, immunosuppression. Dermatologic findings: diffuse edema and erythema of the affected skin-> bullae-> burgundy color-> gangrene; severe pain, anesthesia, crepitus, exudates.

Meningococcemia is caused by Neisseria meningitides (gram neg diplococcus) and is transmitted by the respiratory route. Often seen in young adults and children. Risk factor: asplenia, immunoglobulin or terminal complement deficiencies. Dermatologic findings: abrupt onset of maculopapular or petechial eruption on acral surface, trunk or lower extremities -> progression to purpura in hours; angular edge with «gun metal gray» center; +/- mucosal involvement. Petechiae may evolve into ecchymoses, bullous hemorrhagic lesions, ultimately ischemic necrosis.

Eczema Herpeticum (Kaposi's varicelliform eruption) is caused by Herpes virus (HSV1 > HSV2). Risk factor: any diseases with impaired skin barrier. Dermatologic findings: 2-3 mm umbilicated vesicles -> punched out erosions-> hemorrhagic crusts. If severe, may have systemic involvement.

Erythroderma manifests itself as generalized erythema involving 90% of BSA, pruritus. Clinical presentation: fever, malaise; excessive vasodilatation -> protein and fluid loss -> hypotension, electrolyte imbalance, congestive heart failure. Etiology: 50% due to preexisting dermatoses – seborrheic dermatitis, lymphoma (CTCL), leukemia, atopic dermatitis, psoriasis, pityriasis rubra pilaris, idiopathic, drugs (esp in HIV pts). Management: supportive care with fluid and electrolyte; need to search for underlying causes -> treatment of underlying dermatoses (topical corticosteroids, emollients); exception of signs of infection; mortality is 18%.

Types of Drug Reactions: exanthematous eruptions; fixed drug eruption; drug-induced hypersensitivity syndrome (DIHS), also

called Drug-related eosinophilia with systemic symptoms (DRESS); epidermal necrolysis: Stevens-Johnson syndrome (SJS), and toxic epidermal necrolysis (TEN). Drug-induced skin reactions can be classified according to timing: immediate reactions: occur less than 1 hour of the last administered dose (urticaria, angioedema, anaphylaxis); delayed reactions: occurring after one hour, but usually more than 6 hrs and occasionally weeks to months after the start of administration (exanthematous eruptions, fixed drug eruption, systemic reactions (DIHS, SJS, TEN), vasculitis (may also be systemic)).

Exanthematous eruptions are the most common of all cutaneous drug eruptions (~90%). Limited to the skin. Lesions initially appear on the trunk and spread centrifugally to the extremities in a symmetric fashion. Erythematous macules and infiltrated papules, pruritus and mild fever may be present. Skin lesions usually appear more than 2 days after the drug has been started, mainly around day 8-11, and occasionally persists 2-3 days after having stopped the drug. Treatment consists of topical steroids, oral antihistamines, and reassurance. Resolves in a few days to a week after the medication is stopped. Can continue the medication if the eruption is not too severe and the medication cannot be substituted. Resolves without sequelae (though extensive scaling/ desquamation can occur).

Fixed Drug Eruption is an adverse drug reaction characterized by the formation of a solitary erythematous patch or plaque that will recur at the same site with re-exposure to the drug. Commonly involved drugs include: phenolphthalein (laxatives), tetracyclines, metronidazole, sulfonamides, barbiturates, NSAIDs, salicylates, food coloring (yellow). Often affects the mouth, genitalia, face, and acral areas. In previously sensitized individual, lesions may occur from 30 minutes to 8 hours after ingesting the drug. Early lesions are sharply demarcated erythematous macules. Lesions become edematous, forming a plaque, which may evolve to become a bulla and then an erosion. Healed lesions are dark brown with violet hue. Commonly solitary and can become large, may be multiple with random distribution. Treatment: lesions resolve days to few weeks after the drug is discontinued; non-eroded lesions can be treated with a potent topical glucocorticoid ointment; eroded cutaneous lesions can be treated with an antimicrobial ointment and a dressing until the site is reepithelialized; address pain, especially for mucosal lesions.

Stevens-Johnson syndrome (SJS) and toxic epidermal necrolysis (TEN) are acute life-threatening mucocutaneous reactions, characterized by extensive necrosis and detachment of the epidermis and mucosal surfaces. These two conditions represent an identical process but differ in severity based on body surface area (BSA) that is involved. SJS/TEN is a dermatologic emergency: mortality rate varies from 5-12% for SJS and > 20% for TEN. Increasing age, significant comorbid conditions, and greater extent of skin involvement correlate with poor prognosis. Clinically begins within 6-8 weeks after the onset of drug exposure. Fever, headache, rhinitis, and myalgias may precede the mucocutaneous lesions by 1-3 days. Eruption is initially symmetric and distributed on the face, upper trunk, and proximal extremities. Rash can rapidly extend to the rest of the body. Initial skin lesions are characterized by erythematous, irregularly shaped, dusky red to purpuric macules (atypical targets), which progressively coalesce.

Dark center of atypical target lesions may blister. Mortality rates: SJS < 10%, SJS/TEN 10-30%, TEN > 30%. Treatment includes early recognition and withdrawal of the offending drug(s) and supportive care. In case of doubt, all non-life-sustaining drugs should be stopped. Consult dermatology at earliest moment of concern for SJS or TEN.

Care should proceed in a burn unit for patients with >25-30% BSA involvement. Multidisciplinary approach is necessary; immediately consult ophthalmology if there is ocular involvement

References:

1. Usatine RP, Sandy N. Dermatologic Emergencies. Am Fam Physician. 2010; 82: (7): 773-780
2. **Адаскевич** ВП **Неотложная дерматология**. М.: Триада-фарм, 2001; 196 с.
3. Abate MS, Battle LR, Emerson AN et al. Dermatologic Urgencies and Emergencies: What Every Pathologist Should Know. Arch Pathol Lab Med. 2019; 143:919-942.
4. Kress DW. Pediatric dermatology emergencies. Current Opinion in Pediatrics. 2011; 23: 403-406.
5. Schnyder B. Approach to the Patient with Drug Allergy. Med Clin N Am. 2010; 94: 665-679.

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