

The YEAR BOOK of

Dermatology

1980

Edited by

RICHARD L. DOBSON, M.D.

BRUCE H. THIERS, M.D.

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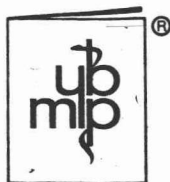
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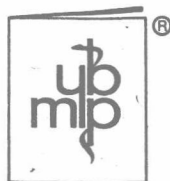
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Current Literature Quiz

The significant advances described in this YEAR BOOK introduce new diagnostic and therapeutic procedures useful for treating conditions seen frequently in your practice. The following questionnaire will test your familiarity with the current literature. The correct answers are given in the back of the book.

1. Photodynamic inactivation in the treatment of herpes simplex virus infections is: (a) consistently effective; (b) possibly carcinogenic; (c) dependent on the presence of complement-fixing antibodies; (d) of no proved efficacy; (e) more effective when used for mucosal lesions.
2. Histologic findings in experimentally induced allergic contact dermatitis include: (a) an increased number of mononuclear cells; (b) an increased number of basophils; (c) an increased number of neutrophils; (d) an increased number of mast cells; (e) an increased number of eosinophils.
3. Granuloma annulare: (a) is consistently related to abnormal glucose metabolism; (b) occurs most often in patients with adult-onset diabetes mellitus; (c) is histologically similar to necrobiosis lipoidica; (d) may be found at insulin injection sites; (e) occurs most often in patients with juvenile diabetes mellitus.
4. In patients with lupus erythematosus associated with C2 deficiency, which of the following statements are correct? (a) Frequent bacterial infections occur. (b) Renal involvement is common. (c) Antinuclear antibody titers are markedly elevated. (d) Extensive polycyclic skin lesions are often present. (e) Serum C4 levels are usually depressed.
5. Recent work has suggested the efficacy of an ointment containing BCG and cord factor in the treatment of: (a) squamous cell carcinoma; (b) Kaposi's sarcoma; (c) epidermodysplasia verruciformis; (d) basal cell carcinoma; (e) solar keratoses.
6. Ultrastructural changes in nuclei and nucleoli in psoriatic epidermis during and after psoralen plus long-wave ultraviolet light (PUVA) therapy include: (a) irregularity of the nuclear envelope; (b) enlargement of nuclei and nucleoli; (c) disappearance of fibrillar centers; (d) increased heterochromatin; (e) decrease in nuclear bodies.
7. In the treatment of psoriasis, which of the following statements are true? (a) Triamcinolone acetone cream, 0.1%, under occlusion, produces rapid resolution with prompt relapse. (b) Therapy with PUVA alone produces more rapid resolution than topical corticosteroids. (c) Therapy with PUVA alone induces longer remissions than topical corticosteroids. (d) The use of PUVA plus topical corticosteroids under occlusion produces more rapid resolution than either alone. (e) The use of PUVA plus topical corticosteroid therapy results in more rapid relapse than PUVA alone.
8. Salicylic acid toxicity is suggested by: (a) metabolic acidosis; (b) respiratory alkalosis; (c) hyperventilation; (d) tinnitus; (e) abdominal discomfort.
9. Which of the following systemic abnormalities have been associated with psoriasis: (a) small joint arthritis; (b) sacroiliitis; (c) liver disease; (d) occlusive vascular disease; (e) sarcoidosis?

10. Autoimmune phenomena associated with psoriasis include: (a) antibodies directed against the stratum corneum; (b) antibodies against the nuclei of epidermal basal cells; (c) anti-DNA antibodies; (d) suppressor cell dysfunction; (e) suppressor cell hyperfunction.
11. Recent work has proved conclusively that the best treatment for early mycosis fungoides is: (a) nitrogen mustard; (b) electron beam; (c) PUVA; (d) systemic chemotherapy; (e) unknown.
12. The use of PUVA therapy may be helpful in the treatment of: (a) polymorphic light eruption; (b) porphyria cutanea tarda; (c) erythropoietic porphyria; (d) xeroderma pigmentosum; (e) mycosis fungoides.
13. Eruptive melanocytic nevi have been associated with: (a) pregnancy; (b) corticosteroid therapy; (c) estrogen therapy; (d) bullous disease; (e) burns.
14. When used in the treatment of cystic and conglobate acne, 13-cis-retinoic acid: (a) affects surface lipid composition; (b) initiates prolonged clinical remissions; (c) induces transient leukopenia and thrombocytopenia; (d) may be teratogenic after long-term use; (e) may be effective when used for brief periods followed by long treatment-free intervals.
15. Recurrent digital fibroma of childhood: (a) usually occurs on the thumbs or great toes; (b) frequently metastasizes; (c) can be excised and grafted; (d) is encapsulated histologically; (e) grows fairly rapidly.
16. Which of the following may be associated with basement membrane immunoglobulin deposition: (a) lupus erythematosus; (b) bullous pemphigoid; (c) herpes gestationis; (d) pemphigus foliaceus; (e) epidermolysis bullosa acquisita?
17. When used in the treatment of acne, topical ethyl lactate: (a) may be hydrolyzed by bacterial lipases to lactic acid and ethyl alcohol; (b) may inhibit the hydrolysis of triglycerides to free fatty acids; (c) is well tolerated by the skin; (d) is less effective than vitamin A acid; (e) is highly allergenic.
18. When used in the treatment of psoriasis, oral retinoids: (a) are metabolized in vivo to retinoic acid; (b) are particularly effective in the treatment of psoriatic erythroderma; (c) may cause cheilitis; (d) may be of added benefit when used with other treatment modalities; (e) are phototoxic.
19. Cutaneous lesions associated with coccidioidomycosis include: (a) erythema nodosum; (b) urticaria; (c) lichen planus-like reaction; (d) erythema multiforme; (e) fungating hyperplastic tumors.
20. Topical sodium pyruvate: (a) may dissolve epidermal proteins responsible for cell adhesion; (b) may increase the water-holding ability of the stratum corneum; (c) has been used successfully to treat patients with severe forms of epidermolytic hyperkeratosis and hyperkeratotic Darier's disease; (d) is highly irritating when applied topically; (e) has been used successfully in the treatment of severe comedonal acne.
21. The role of cell-mediated immunity in the pathogenesis of vasculitis may include: (a) the participation of migration inhibitory factor to recruit monocytes to the immune reaction site; (b) the transformation of monocytes into activated macrophages; (c) the transformation of macrophages into epithelioid cells with the formation of granulomas; (d) the phagocytosis of immune complexes; (e) activation of complement.
22. Patients with serologically active, clinically quiescent systemic lupus erythematosus: (a) will ultimately develop symptomatic renal disease; (b) should be treated until the antinuclear antibody drops below 1:320; (c) should be treated until the complement level returns to normal; (d) should be treated for clinical exacerbations only; (e) should be treated with systemic steroids but not with immunosuppressant agents.
23. Scleromyxedema: (a) is synonymous with papular mucinosis or general-

- ized lichen myxedematosis; (b) is associated with a monoclonal protein, usually of the IgG, lambda-type; (c) is associated with thyroid dysfunction; (d) is associated with scleroderma; (e) may respond to low-dose melphalan therapy.
24. Bowenoid papulosis: (a) occurs in young adults; (b) is easily differentiated from other genital lesions; (c) is usually premalignant; (d) often occurs in patients with previous genital viral infections; (e) should be treated with topical 5% 5-fluorouracil under occlusion.
 25. Current theories explaining the efficacy of PUVA include: (a) inhibition of DNA synthesis; (b) cytotoxicity for rapidly proliferating cells; (c) photochemical alteration of proteins affecting their immunogenicity; (d) a direct effect on subpopulations of lymphocytes; (e) destruction of stratum corneum antigen.
 26. Necrotizing venulitis: (a) rarely affects the skin; (b) usually involves the upper extremities and torso; (c) may be associated with lesions resembling urticarial or ulcerative lesions; (d) frequently presents with palpable purpura; (e) is best treated by alternate-day steroid therapy.
 27. The best treatment for SLE with nephritis is: (a) steroids alone; (b) immunosuppressives alone; (c) steroids and immunosuppressives; (d) steroids initially, immunosuppressives administered subsequently; (e) unknown.
 28. The most practical methods for diagnosing genital candidiasis are: (a) clinical examination; (b) culture; (c) Wood's light examination; (d) hemagglutination titer; (e) KOH examination.
 29. The enzymes present in the granular layer of the epidermis probably are derived from: (a) keratinocytes; (b) basal cells; (c) Merkel's cells; (d) Langerhans' cells; (e) dermal dendritic cells.
 30. Marked necrosis of the basal cell layer is a histologic feature of: (a) bullous pemphigoid; (b) cicatricial pemphigoid; (c) herpes gestationis; (d) dermatitis herpetiformis; (e) porphyria cutanea tarda.
 31. Anemia in dapsone-treated patients may be related to: (a) glucose-6-phosphate dehydrogenase deficiency; (b) hemolysis; (c) oxidation of hemoglobin by 4'-amino-4'-hydroxyamino diphenylsulfone (DDS-NHOH); (d) diminished red blood cell survival; (e) spherocytosis.
 32. Serum from patients with pretibial myxedema: (a) enhances fibroblast growth and proliferation in vitro; (b) may accelerate the incorporation of glucosaminoglycan precursors by cultured fibroblasts; (c) may contain an abnormal IgG; (d) can induce hypothyroidism in rats; (e) inhibits fibroblast growth and proliferation in vitro.
 33. Membrane-coating granules: (a) contain lysosomal enzymes; (b) are increased in comedones; (c) are increased by application of vitamin A acid; (d) decrease cohesiveness and promote desquamation; (e) increase cohesiveness and inhibit desquamation.
 34. The intensity of vasoconstriction after application of a topical steroid preparation is dependent on: (a) potency of the steroid; (b) penetration into the skin; (c) epidermal reservoir; (d) clearance from the skin; (e) vehicle.
 35. Polymorphic pemphigoid: (a) shares clinical features of both dermatitis herpetiformis and bullous pemphigoid; (b) usually requires prednisone for control; (c) is characterized by linear deposits of IgG or IgA along the basement membrane; (d) occurs mainly in children; (e) is characterized by positive indirect immunofluorescence in at least 95% of the cases.
 36. Cutaneous manifestations of reticular erythematous mucinosis include: (a) blotchy erythematous reticulated patches; (b) primary distribution over the chest and back; (c) erythema multiforme; (d) ecchymotic-like lesions; (e) well-circumscribed nodules.

37. The improvement of psoriasis after dialysis or cardiopulmonary bypass: (a) has only been demonstrated in anecdotal reports; (b) has been proved in numerous controlled studies; (c) is related to the removal of an epidermal growth factor in the ultrafiltrate; (d) may be related to a depression of chemotaxis; (e) occurs only in patients with chronic renal failure.
38. The relative risk of cutaneous carcinoma in patients treated with oral methoxalen photochemotherapy: (a) is increased in patients who previously have received ionizing radiation; (b) is increased in patients with a previous cutaneous carcinoma; (c) may be related to the need for a long-term maintenance treatment; (d) has been shown not to be associated with an increased risk of melanoma; (e) is highest in patients of Mediterranean ancestry.
39. The use of topical clindamycin in the treatment of acne vulgaris: (a) is more effective than systemic tetracycline; (b) is associated with a significant risk of pseudomembranous colitis; (c) is a reasonable alternative in a patient whose clinical condition is deteriorating during topical erythromycin therapy; (d) is associated with the emergence of combined erythromycin-resistant and clindamycin-resistant *Corynebacterium acnes* strains; (e) is more effective than systemic tetracycline.
40. The best immunofluorescence test for the diagnosis of pemphigus is: (a) indirect immunofluorescence with monkey esophagus; (b) indirect immunofluorescence with guinea pig esophagus; (c) antinuclear antibody determination; (d) direct immunofluorescence of uninvolved skin; (e) direct immunofluorescence of involved skin.
41. The finding that Raynaud's phenomenon in generalized scleroderma might be dependent on a low-pressure vascular bed implies: (a) local factors in blood flow control are defective; (b) vasodilator drugs, which decrease systemic blood pressure, are contraindicated; (c) warm environments and an increase in systolic blood pressure would be of benefit; (d) immune complexes are of pathogenetic importance; (e) intra-arterial reserpine is the treatment of choice.
42. Dicarboxylic acids: (a) may be involved in the hypopigmentation and damage to melanocytes in tinea versicolor; (b) may have a direct inhibitory and cytotoxic effect on the abnormally active or structurally disorganized melanocytes in lentigo maligna; (c) produce hypopigmentation when applied to normal skin; (d) may be used to blanch café au lait spots; (e) are effective in the treatment of condyloma acuminata.
43. The actinic cheilitis of hereditary polymorphic light eruption: (a) cannot be differentiated histologically from chronic actinic cheilitis caused by long exposure to sunlight without any known element of hypersensitivity; (b) is potentially malignant; (c) occurs most often in American Indians; (d) may respond to PUVA therapy; (e) may respond to antimalarial therapy.
44. Tretinoin treatment of oral lichen planus: (a) may be augmented by topical steroids; (b) results in total and permanent remission; (c) is effective on both reticular and plaque lesions; (d) may cause increased soreness; (e) increases the risk of carcinogenicity.
45. Mast cells in the skin: (a) are grouped around appendages and dermal blood vessels; (b) correlate with skin histamine content; (c) play no role in the lesions of urticaria pigmentosa; (d) produce IgG but not IgM; (e) contain giant melanin granules.
46. A defect in fibroblast glycosaminoglycan metabolism has been demonstrated in: (a) the hyperplastic variant of dominant dystrophic epidermolysis bullosa; (b) the allopapuloid variant of dominant dystrophic epider-

- molysis bullosa; (c) recessive epidermolysis bullosa; (d) epidermolysis bullosa simplex; (e) epidermolysis bullosa acquisita.
47. Immunofluorescence findings in granuloma annulare: (a) include immunoglobulins, complement and fibrinogen in the walls of the blood vessels; (b) include immunoglobulins, complement and fibrinogen in the region of the dermal-epidermal junction; (c) may include deposition of fibrin in the necrobiotic and granulomatous areas; (d) may be similar to the immunofluorescence findings in necrobiosis lipidica; (e) are usually absent.
 48. Dermal or vascular factors may be important in the epidermal proliferation of: (a) psoriasis; (b) pyogenic granuloma; (c) lichen simplex chronicus; (d) urticaria; (e) dermatofibroma.
 49. Prenatal diagnosis of xeroderma pigmentosum and xeroderma pigmentosum variants has been made possible by assays of: (a) migration inhibitory factor; (b) E rosette formation; (c) unscheduled DNA synthesis; (d) excision repair; (e) postreplication repair.
 50. Recent work in the pathogenesis of scleroderma suggests: (a) diminished collagen degradation; (b) increased collagen biosynthesis; (c) increased synthesis of type I and type III procollagens in a normal ratio; (d) increased synthesis of type I and type III procollagens in an abnormal ratio; (e) a role for proline analogues in treatment.

HLA, Ia AND THE SKIN

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Introduction

It was only 22 years ago that Dausset described antibodies reactive against leukocytes.³³ Since that time, knowledge of these antibodies and the antigens with which they react (HLA) has expanded at a pace virtually unparalleled in medical research. The first association of HLA with a dermatologic disease, dermatitis herpetiformis, was made in 1972.⁷⁷ Since then, numerous investigators have sought to discover the relationship of these antigens to a variety of skin diseases and to the mechanisms that cause them. Only a selected review will be attempted here since several other excellent reviews have been published.^{6, 19, 39, 46, 95, 115, 123, 148, 165, 170}

The HLA antigens are glycoproteins on the cell surface of most nucleated human cells. These glycoproteins differ in subtle ways from one person to another, and HLA surface markers uniquely "fingerprint" each person's cells. These fingerprints allow an individual's immune system to recognize if a given cell is his own.

Landsteiner discovered surface marker proteins on red blood cells, which determined the fate of these cells after transfusion.⁹³ Red blood cell substances A and B are histocompatibility antigens on red blood cells and determine whether transfused red blood cells will be accepted or rejected. Like red blood cells, nucleated cells, such as epidermal cells^{84, 117, 166, 171} and leukocytes, also have substances on the cell surface that act as histocompatibility antigens after transplantation. Synthesis of these antigens is under genetic control, and some are HLA antigens.

Historically, the synthesis of histocompatibility antigens on the cell surface of leukocytes was thought to be under the direction of genes at a specific locus on each member of the human chromosome 6 pair. This locus was called histocompatibility locus A (HLA), and the different substances were numbered 1, 2, 3, 4, etc. Subsequently, it was learned that the genes responsible for histocompatibility actually lie at several closely linked loci (now called A, B, C, D and DR), but the designation HLA has been retained for all of these linked genes and for their products—the HLA antigens. There are at least 4 or 5 genetic loci that produce HLA antigens. These loci are termed A, B, C, D and DR (in