

Acne

ABSTRACTS

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Glucose tolerance in blood and skin of patients with acne vulgaris.

Abdel KM, El Mofty A, Ismail A, and Bassili F

Ind J Derm 22:139-49, 1977

No abstract.

Acne vulgaris: therapy directed at pathophysiologic defects.

Ayres S Jr, Mihan R

Cutis 1981 Jul;28(1):41-2

An effective therapeutic regimen for the treatment of acne vulgaris is presented. The emphasis is based upon correcting a defect in keratinization of the sebaceous follicles with a combination of vitamins A and E. This prevents the formation of milia and comedones, thus depriving the Propionibacterium acnes of a culture medium. Vitamin E also prevents irritating lipid peroxidation of sebum, damaged by bacterial growth, which may be responsible for the inflammatory aspects of acne. No antibiotics were employed in the series of 98 consecutive cases examined herein.

Pustular acne staphyloiderma and its treatment with tolbutamide.

Cohen J and Cohen A

Can Med Assoc J 80:629-32, 1959

No abstract.

Treating adult acne naturally.

Epstein, K.

Natural Foods Merchandiser 2000 Jul.

Endotoxin-induced changes in copper and zinc metabolism in the Syrian hamster.

Etzel KR, Swerdel MR, Swerdel JN, Cousins RJ

J Nutr 1982 Dec;112(12):2363-73

The temporal response of zinc and copper metabolism to endotoxin administration was examined in Syrian hamsters over a 144-hour period. Serum copper was significantly elevated at 12, 24 and 72 hours after endotoxin, whereas serum zinc was reduced 4-48 hours after treatment. A brief elevation (8 hours) in liver copper concentration and a sustained (72 hours) increase in liver zinc concentration were also observed. The amount of zinc associated with liver metallothionein (MT) progressively increased with time, to a plateau by 24 hours and persisted at the elevated level until 72 hours after endotoxin treatment. In vitro translation of poly (A)+ RNA from liver polyribosomes showed that following endotoxin treatment MTmRNA activity was maximally elevated 6 hours after endotoxin administration and remained elevated 24 and 48 hours thereafter. Slab gel electrophoresis of serum proteins indicated changes in a stainable protein comigrating with purified ceruloplasmin after endotoxin administration. Pooled gingival tissue from endotoxin-treated hamsters demonstrated a consistently elevated copper content 12-144 hours after treatment. Endotoxin isolated from Bacteroides melaninogenicus was more effective in elevating gingival and serum copper and gingival zinc than Escherichia coli

endotoxin. It was concluded that endotoxin administration elicits responses that result in enhanced metaolthionein mRNA activity. In addition, Cu and Zn concentrations in serum, liver and gingival tissue are influenced by different endotoxins to different degrees.

[Current aspects about the role of zinc in nutrition]. [Article in French]

Favier A Groupe de recherche sur les pathologies oxydatives, Universite de Grenoble, La Tronche.

Rev Prat 1993 Jan 15;43(2):146-51

The role played by zinc in biology is now better known, and numerous biochemical mechanisms, such as immunity or actions on several hormones and more than 200 enzymes, have proved to be zinc-dependent. Thus, many functions are disturbed when this trace metal is deficient, including, for example, taste and appetite, cell multiplication, growth, pregnancy, fertility, defence against bacteria and brain functions. Zinc intake has been found to be unexcessive and indeed, at the limit of sufficiency in the French population. Groups at risk, such as neonates, growing children, pregnant women and elderly people, should have a higher zinc intake provided by dietary measures or supplementation. Zinc supplementation has been shown to exert a beneficial effect in randomized studies concerning children's growth, acne, old people's immunity or low female fertility. Such supplementation must be balanced and given in moderate doses since zinc interacts with other foodstuffs, and an excess of zinc can be as bad as its deficiency in our nutrition.

The Mosby Medical Encyclopedia, Revised Edition

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1996, p. 295. St. Louis: Mosby.

The role of inflammation in chronic disease.

Greenwell, I.

Life Extension Magazine 2001 Feb; 7(2): 43-4. http://www.lef.org/magazine/mag2001/feb2001_report_acam_1.html

Historical aspects of the oral use of retinoids in acne.

Hartmann D, Bollag W Nippon Roche Research Center, Kamakura-City, Japan.

J Dermatol 1993 Nov;20(11):674-8

A number of investigations of the effects of vitamin A deficiency in animals and man and its treatment with natural products containing vitamin A were carried out in the twenties and thirties. In 1942, a clinical study in patients with acne treated with vitamin A yielded encouraging results. Further trials in the forties and fifties, trying to confirm the beneficial effect of oral vitamin A in acne, met with equivocal success. In the sixties, all-trans retinoic acid (tretinoin) became clinically available, and its topical efficacy in acne could be demonstrated. In 1971, oral tretinoin also was shown to be active in patients with acne. Coincidentally, the efficacy of oral 13-cis retinoic acid (isotretinoin) became evident in a series of unpublished studies in Europe. Then, in 1978, a trial carried out at the NIH, Bethesda, Maryland, yielded convincing evidence that isotretinoin is a potent new drug for the treatment of severe cystic acne. In 1982, isotretinoin was registered in the United States and one year later in Europe for the treatment of severe, recalcitrant, cystic acne. Since then, many thousands of patients suffering psychologically and physically from the severity of their disease have been treated successfully with this drug. However, the main concern of physicians prescribing isotretinoin has to focus on its potentially severe side effects, particularly its teratogenicity.

Nutrition-endocrine interactions: induction of reciprocal changes in the delta 4-5 alpha-reduction of testosterone and the cytochrome P-450-dependent oxidation of estradiol by dietary macronutrients in man.

Kappas A, Anderson KE, Conney AH, Pantuck EJ, Fishman J, Bradlow HL

Proc Natl Acad Sci U S A 1983 Dec;80(24):7646-9

The in vivo biotransformations of drugs known to be metabolized by enzymes localized in the endoplasmic reticulum of liver can be greatly altered by diet in humans, as we have shown previously. Steroid hormones also are metabolized extensively by hepatic microsomal enzymes; therefore, we examined the possibility that testosterone and estradiol biotransformations, as assessed with radiolabeled tracer methods, could be influenced by dietary macronutrients. Normal males were fed a high-protein diet for 2 weeks, followed by a high-carbohydrate diet for an additional 2 weeks. The delta 4-5 alpha-reduction of testosterone was considerably

diminished, while the cytochrome P-450-dependent hydroxylation of estradiol at the C2 position was substantially enhanced during ingestion of the high-protein diet as compared with the high-carbohydrate diet. These results indicate that dietary macronutrients can significantly alter major metabolic pathways for testosterone and estradiol in man. The mechanism by which reciprocal changes in the delta 4-5 alpha-reduction of testosterone and the cytochrome P-450-mediated oxidation of estradiol are produced by diets is not known. Similar changes in steroid delta 4-5 alpha-reduction and cytochrome P-450-dependent chemical oxidations have been observed in circumstances in which the mixed-function oxidase system in liver is induced by agents such as phenobarbital, hexachlorobenzene, dioxin, and polyhalogenated biphenyls. Thus, the alterations in steroid hormone metabolism produced by dietary macronutrients in man mimic those that can be produced by drugs and environmental chemicals.

Oral vitamin A in acne vulgaris. Preliminary report.

Kligman AM, Mills OH Jr, Leyden JJ, Gross PR, Allen HB, Rudolph RI

Int J Dermatol 1981 May;20(4):278-85

Oral vitamin A (retinol) is generally not considered useful in the treatment of acne vulgaris. We conducted a study which showed that retinol was indeed ineffective at the usual doses of 50,000 to 100,000 IU daily. Retinol was highly efficacious in doses of 300,000 units for women and 400,000 to 500,000 units for men, toxicity was slight and limited mainly to skin (xerosis) and mucous membranes (cheilitis). The danger of hypervitaminosis A in this dosage range has been exaggerated. Retinol is a valuable drug for treating stubborn, severely inflammatory acne vulgaris. It is administered until the disease is brought under control, usually within three to four months. Then the dosage is progressively reduced relying on conventional drugs to keep the disease in abeyance.

A stone that kills two birds: pantothenic acid in the treatment of acne vulgaris and obesity.

Leung, L.H.

J. Orthomol. Med. 1997; 12(2): 99-114; revised December 1998.

Pantothenic acid deficiency as the pathogenesis of acne vulgaris.

Leung LH. Department of General Surgery, Hong Kong Central Hospital, Hong Kong.

Med Hypotheses 1995 Jun;44(6):490-2

For years, the pathogenesis of acne vulgaris has been known to be strongly influenced by hormonal factors. However, the exact role of and the interrelationship among the various hormones in question have not been well elucidated. Here, I wish to suggest a radically different theory for its pathogenesis and relate its basic pathology to a deficiency in pantothenic acid, a vitamin hitherto not known to cause any deficiency syndrome in humans. Hence, the effect of hormonal factors in this disease entity becomes secondary to that of the availability of pantothenic acid. A complete cure of this condition is effected by a very liberal replacement therapy with the vitamin.

High-chromium yeast for acne?

McCarty M

Med Hypotheses 1984 Jul;14(3):307-10

Many dermatologists have reported that insulin and tolbutamide are therapeutically effective in acne. This rationalizes a recent observation that high-chromium yeast appears to have value as an acne treatment.

Effects of oral zinc and vitamin A in acne.

Michaelsson G, Juhlin L, Vahlquist A

Arch Dermatol 1977 Jan;113(1):31-6

The effects of oral zinc sulfate (corresponding to 135 mg of zinc daily) alone and in combination with vitamin A (300,000 international units) daily on acne lesions have been compared with those of vitamin A alone and of a placebo. The number of comedones, papules, pustules, and infiltrates were counted at each visit. After four weeks, there was a significant decrease in the number of papules, pustules, and infiltrates in the zinc-treated groups. The effect of zinc plus vitamin A was not better than zinc alone. After 12

weeks of treatment, the mean acne score had decreased from 100% to 15%. The mechanism for the effect of zinc therapy in acne, to our knowledge, is not presently known.

Serum zinc and retinol-binding protein in acne.

Michaelsson G, Vahlquist A, Juhlin L

Br J Dermatol 1977 Mar;96(3):283-6

The serum levels of zinc and retinol-binding protein (RBP) have been determined in 173 patients with acne and compared with those of a control group. The RBP is a specific transport protein and its level in plasma reflects the amount of vitamin A available to the tissues. Patients with severe acne were found to have lower levels of RBP than either patients with mild acne or healthy subjects of the same age. In the case of males with severe acne, the mean serum zinc level was significantly lower than that of the control group. No such difference was observed for girls. The observed condition of low levels of zinc and vitamin A in the serum of patients with severe acne may provide a rationale for the clinically good effect of oral zinc treatment.

A double-blind study of the effect of zinc and oxytetracycline in acne vulgaris.

Michaelsson G, Juhlin L, Ljunghall K

Br J Dermatol 1977 Nov;97(5):561-6

With a double-blind technique, the effects of oral zinc and tetracyclines were compared in 37 patients with moderate and severe acne. No difference in effect between the treatments was seen and no side-effects were noted in any group. After 12 weeks of treatment, the average decrease in the acne score was about 70% in both groups.

Erythrocyte glutathione peroxidase activity in acne vulgaris and the effect of selenium and vitamin E treatment.

Michaelsson G, Edqvist LE

Acta Derm Venereol 1984;64(1):9-14

The glutathione-peroxidase (GSH-Px) activity in erythrocytes was determined in 42 men with severe acne and 47 women with acne--26 of a moderate degree and 21 severe. The male acne patients had significantly lower GSH-Px levels than the controls. The women with acne did not differ significantly from the controls in this respect when patients and controls using oral contraceptives were excluded. Both the female controls and the women with acne using oral contraceptives had significantly higher GSH-Px values than the corresponding groups not using the pill. The pubertal acne girls had the same high GSH-Px activity as women on oral contraceptives. In an open trial 29 patients were given 0.2 mg of selenium (as Na₂Se O₃) + 10 mg of tocopheryl succinate for their acne twice daily for 6-12 weeks. A good result was obtained, especially in patients with pustular acne and low GSH-Px activity, and the beneficial effect was usually paralleled by a slow rise of the GSH-Px activity. Some 6-8 weeks after withdrawal of the treatment the GSH-Px values had returned to the pretreatment levels.

Encyclopedia of Nutritional Supplements : The Essential Guide for Improving Your Health Naturally

Murray, M.T.

1996. Roseville, CA: Prima Publishing.

A double-blind controlled evaluation of the sebosuppressive activity of topical erythromycin-zinc complex.

Pierard-Franchimont C, Goffin V, Visser JN, Jacoby H, Pierard GE Department of Dermatopathology, University of Liege, Belgium.

Eur J Clin Pharmacol 1995;49(1-2):57-60

In a double-blind randomised study, 14 volunteers applied 4% erythromycin plus 1.2% zinc (Zineryt lotion) and 4% erythromycin lotions, each on half of the forehead twice daily for 3 months. The sebum output was evaluated at 3-week intervals using the photometric and the lipid-sensitive film methods. Evaluations of casual level (CL) and sebum excretion rate (SER) were made with a Sebumeter, and total area of lipid spots (TAS) was measured on Sebutapes. Compared to baseline values, the formulation of the erythromycin-zinc complex induced significant reductions in SER after 6 and 9 weeks, and in CL and TAS at 3, 6, 9 and 12 weeks. The mean reduction in TAS was over 20% for four successive 1-h samplings on completion of the study. Significant reductions in

CL, SER and TAS were observed for the erythromycin-zinc formulation compared to the control lotion at 6 and 9 weeks, and also at 3 weeks for SER and TAS, and at 12 weeks for CL and TAS. This study indicates that sebum output is significantly reduced by the erythromycin-zinc complex. This reduction is theoretically beneficial for the acneic patient.

Acne: endocrinologic aspects.

Pochi PE

Cutis 1982 Aug;30(2):212-4, 216-7, 219 passim

Acne is dependent for its development on several factors, one of which is hormonal. The principal and possibly sole mechanistic link between hormones and acne is sebum, the secretory product of the sebaceous glands which is highly androgen-sensitive. Some but not all, patients with acne can be shown to have systemic androgen abnormalities. In addition, there is evidence to suggest that androgens are metabolized abnormally in the skin, possibly resulting in excessive sebaceous gland secretion. Systemic endocrine therapy of acne is designed to reduce the androgenic stimulation of the sebaceous gland. Such treatment includes the peroral cyclic administration of estrogen for ovarian inhibition and the use of low-dosage glucocorticoid for adrenocortical androgen suppression. Combined estrogen-glucocorticoid treatment induces the most telling effect in reducing sebaceous gland activity.

Healing Nutrients

Quillin, J., Patrick, R.D.

1989, p. 377. New York: Vintage.

The use of retinoids in the pediatric patient.

Ruiz-Maldonado R, Tamayo-Sanchez L, Orozco-Covarrubias ML Department of Dermatology, National Institute of Pediatrics, Mexico City, Mexico.

Dermatol Clin 1998 Jul;16(3):553-69

Oral retinoids are molecules derived from vitamin A that represent one of the most important steps forward in dermatologic therapeutics in the present century. The treatment of acne, severe psoriasis, and severe disorders of keratinization, prevalent diseases in children and adolescents, have radically changed since the advent of oral retinoids. Like most highly-effective medications, oral retinoids also have important untoward effects. Specialists, and in particular, dermatologists and pediatricians should be prepared to maneuver the delicate balance between therapeutic efficacy and side effects in order to give the pediatric patient the maximum benefit with the lowest possible risk.

Topical therapy for acne.

Russell JJ. Abington Memorial Hospital, Pennsylvania, USA.

Am Fam Physician 2000 Jan 15;61(2):357-66

Acne is a common problem in adolescents and young adults. The disorder is caused by abnormal desquamation of follicular epithelium that results in obstruction of the pilosebaceous canal. This obstruction leads to the formation of comedones, which can become inflamed because of overgrowth of *Propionibacterium acnes*. Topical retinoids such as tretinoin or adapalene are effective in many patients with comedonal acne. Patients with inflammatory lesions benefit from treatment with benzoyl peroxide, azelaic acid or topical antibiotics. Frequently, the use of comedonal and antibacterial agents is required.

Elevated free testosterone levels in women with acne.

Schiavone FE, Rietschel RL, Sgoutas D, Harris R

Arch Dermatol 1983 Oct;119(10):799-802

Female patients with varying grades of acne were examined to determine whether free testosterone levels were a more sensitive indicator of hyperandrogenism than total testosterone values. Of 24 women with acne studied, four were found to have elevated total testosterone levels, whereas 11 had elevated free testosterone levels. Twenty-four age-matched female control subjects without acne, hirsutism, or irregular menstrual cycles all had normal free and total testosterone values. The mean concentration of free

testosterone in the patients with acne was 1.035 ng/dL, while in the control subjects it was 0.54 ng/dL. Other than hirsutism in three patients with acne with elevated free testosterone levels, there were no morphologic clues identified to determine which patients with acne are more likely to have abnormal free testosterone levels. The free testosterone level did not correlate with the type, distribution, or severity of the acne present in the patients.

Increased target tissue uptake of, and sensitivity to, testosterone in the vitamin B6 deficient rat.

Symes EK, Bender DA, Bowden JF, Coulson WF

J Steroid Biochem 1984 May;20(5):1089-93

Six-week old male rats were maintained for 4 weeks on a vitamin B6-free diet to cause a moderately severe degree of vitamin B6 depletion. This led to a significant reduction in the circulating concentration of testosterone in plasma (control = 8.36 +/- 1.68, deficient = 2.13 +/- 0.54 nmol/l), but had no effect on circulating concentrations of luteinizing hormone, or, in intact males, on the weight of the prostate relative to body weight. In both intact and 24-h castrated animals vitamin B6 deficiency resulted in a significant increase in the uptake of [3H]testosterone into the prostate, and both increased and prolonged the specific nuclear retention of the steroid, as assessed by the ratio of radioactivity in the nuclear pellet: the high speed supernatant fraction. The results suggest that vitamin B6 has a function in the action of testosterone (and other steroid hormones), possibly in the recycling of receptors from the nucleus back into the cytosol after initial translocation. Vitamin B6 deficient animals have either a reduced rate of synthesis of testosterone or an increased rate of metabolic clearance compared with vitamin B6 supplemented controls, and this appears to be associated with enhanced target organ response to the hormone.

Activity of testosterone 5 alpha-reductase in various tissues of human skin.

Takayasu S, Wakimoto H, Itami S, Sano S

J Invest Dermatol 1980 Apr;74(4):187-91

In order to know the distribution of testosterone 5 alpha-reductase activity in human skin, we developed a micro-method, in which we used 20-50 micrograms of various tissues microdissected from freeze-dried sections. The characteristics of this enzyme in the sebaceous gland are briefly described, as follows: the identified 5 alpha-reduced metabolites are 5 alpha-dihydrotestosterone, 5 alpha-androstane-3 beta, 17 beta-diol and 5 alpha-androstanedione; the optimal pH is about 7.5; and the apparent Km is approximately 2.4 x 10(-5) M. The measurement of 5 alpha-reductase activity of various components of the skin obtained from 7 men and 5 women revealed that the sweat gland (probably apocrine) in the axillary skin possessed the highest activity of 5 alpha-reductase: the value was nearly 400 pmoles/mg dry weight/hr in the standardized condition. The sebaceous gland also showed a high activity of 85-261 pmoles/mg/hr. The hair follicles exhibited a significantly lower activity than the sebaceous gland. The enzyme activity was negligible in the epidermis, while it was detected in the dermis though the values determined were variable probably because of contamination with other components such as sweat glands and hair follicles. Thus, the present study demonstrates that the 5 alpha-reductase activity is mainly located in the apocrine sweat gland and sebaceous gland. This suggests that 5 alpha-reduction of testosterone is an important step in mediating the action of androgens in these tissues.

High-dose vitamin A therapy for Darier's disease.

Thomas JR 3d, Cooke JP, Winkelmann RK

Arch Dermatol 1982 Nov;118(11):891-4

Three patients with Darier's disease were treated with 1 X 10(6) IU of orally administered vitamin A daily for 14 days. In all patients, 50% to 80% improvement in the skin lesions was noted. Desquamation was minimal, and side effects consisted of drowsiness, mild frontal headache, dry lips and dry nose. During therapy, all patients had a transient, mild increase in the serum triglyceride level, and two patients had a minimal increase in the serum cholesterol concentration.

Zinc sulfate in acne vulgaris.

Weimar VM, Puhl SC, Smith WH, tenBroeke JE

Arch Dermatol 1978 Dec;114(12):1776-8

The effects of orally administered zinc sulfate in 52 patients with mild to moderate acne vulgaris were compared to those of a placebo capsule. The numbers of comedones, papules, pustules, infiltrates, and cysts were counted at each visit over a 12-week period. Forty patients completed the study. Zinc appeared to have a somewhat beneficial effect on pustules but not on comedones,

papules, infiltrates, or cysts. Fourteen patients (50%) in the zinc group had side effects of nausea, vomiting, or diarrhea. Six patients (21%) in the zinc group could not tolerate the nausea and withdrew from the study.

SUGGESTED READING

Thyroid therapy in dermatology.

Barnes B.

Cutis 8:581-3, 1971

No abstract.

Inhibition of erythromycin-resistant propionibacteria on the skin of acne patients by topical erythromycin with and without zinc.

Bojar RA, Eady EA, Jones CE, Cunliffe WJ, Holland KT Department of Microbiology, University of Leeds, U.K.

Br J Dermatol 1994 Mar;130(3):329-36

Propionibacteria resistant to high concentrations of erythromycin [minimal inhibitory concentration (MIC) \leq 0.5 mg/ml] are now commonly isolated from the skin of antibiotic-treated acne patients. This double-blind study was carried out to assess the ability of 4% w/v erythromycin with and without 1.2% w/v zinc acetate to reduce the numbers of erythromycin-resistant propionibacteria in vivo, and also to monitor the acquisition of resistant strains de novo during therapy. Under laboratory conditions, erythromycin-resistant propionibacteria were shown to be as sensitive to zinc acetate as fully sensitive strains. In vivo, the erythromycin/zinc complex and erythromycin alone produced highly significant reductions in total propionibacteria ($P < 0.001$) and in the number of erythromycin-resistant strains ($P < 0.001$ at 8 weeks). After 12 weeks, resistant propionibacteria were reacquired, or acquired de novo, by three patients treated with erythromycin alone and four patients treated with the erythromycin/zinc complex. In contrast, changes in numbers of Micrococcaceae were slight and, after 12 weeks, erythromycin-resistant strains were predominant in both treatment groups. In vitro MIC determinations suggested that this finding might be explained by the exceptionally high degree of erythromycin resistance displayed by some staphylococcal strains (MIC < 4 mg/ml) and by the relative insensitivity of all staphylococcal strains to zinc acetate. Erythromycin with and without zinc was clinically effective, and both preparations produced significant reductions in acne grade, and inflamed and non-inflamed lesion counts ($P < 0.001$).

Androgen status in women with late onset or persistent acne vulgaris.

Darley CR, Moore JW, Besser GM, Munro DD, Edwards CR, Rees LH, Kirby JD

Clin Exp Dermatol 1984 Jan;9(1):28-35

No abstract.

Endotoxin-induced changes in copper and zinc metabolism in the Syrian hamster.

Etzel KR, Swerdel MR, Swerdel JN, Cousins RJ

J Nutr 1982 Dec;112(12):2363-73

The temporal response of zinc and copper metabolism to endotoxin administration was examined in Syrian hamsters over a 144-hour period. Serum copper was significantly elevated at 12, 24 and 72 hours after endotoxin, whereas serum zinc was reduced 4-48 hours after treatment. A brief elevation (8 hours) in liver copper concentration and a sustained (72 hours) increase in liver zinc concentration were also observed. The amount of zinc associated with liver metallothionein (MT) progressively increased with time, to a plateau by 24 hours and persisted at the elevated level until 72 hours after endotoxin treatment. In vitro translation of poly (A)⁺ RNA from liver polyribosomes showed that following endotoxin treatment MTmRNA activity was maximally elevated 6 hours after endotoxin administration and remained elevated 24 and 48 hours thereafter. Slab gel electrophoresis of serum proteins indicated changes in a stainable protein comigrating with purified ceruloplasmin after endotoxin administration. Pooled gingival tissue from endotoxin-treated hamsters demonstrated a consistently elevated copper content 12-144 hours after treatment. Endotoxin isolated from *Bacteroides melanogenicus* was more effective in elevating gingival and serum copper and gingival zinc than *Escherichia coli* endotoxin. It was concluded that endotoxin administration elicits responses that result in enhanced metallothionein mRNA activity. In addition, Cu and Zn concentrations in serum, liver and gingival tissue are influenced by different endotoxins to different degrees.

The effect of intralesional insulin and glucagon in acne vulgaris.

Grover R and Arikan N

L Invest Derm 40:259-61, 1963

No abstract.

Fibrin microclot formation in patients with acne.

Juhlin L, Michaelsson G

Acta Derm Venereol 1983;63(6):538-40

After the addition of *E. coli* polysaccharide to blood from patients with deep inflammatory acne, microclots formed in all patients, whereas this was rarely seen in mild acne and never in controls. Furthermore, spontaneous microclot formation without addition of endotoxin was seen in 5 of the 10 patients with the most severe acne.

The effect of zinc on the 5 alpha-reduction of testosterone by the hyperplastic human prostate gland.

Leake A, Chisholm GD, Habib FK

J Steroid Biochem 1984 Feb;20(2):651-5

The present studies were performed to evaluate the role of zinc in the regulation of testosterone 5 alpha-reduction by the 800 g supernatants prepared from human benign prostate hyperplasia specimens. The results show that when zinc is added at low concentrations the 5 alpha-reduction of testosterone is increased but at higher cation concentrations the metabolism is significantly inhibited. This decrease was mediated by both a non-competitive inhibition of the binding of testosterone to the 5 alpha-reductase enzyme and by a reduction in the formation of the NADPH cofactor. We have also demonstrated that the decreased synthesis of NADPH was produced by a competitive inhibition of both G6P and NADP binding to the G6PD enzyme. The data also suggests that the increase in testosterone metabolism observed at low zinc concentrations does not produce any changes in the binding of testosterone to the 5 alpha-reductase enzyme. In spite of the above observations we were unable to establish any correlation between the endogenous zinc content of the tissue and the in vitro capacity of the BPH samples to 5 alpha-reduce testosterone. The present study suggests a possible physiological role for the regulation of testosterone metabolism by zinc in the human prostate gland.

Local therapy of oral leukoplakia with vitamin A.

Mulay A and Urbach F

Arch Dermatol 78:637-8, 1958

No abstract.

Beneficial effect of chromium-rich yeast on glucose tolerance and blood lipids in elderly patients.

Offenbach E and Pistunyer F

Diabetes 29:919-25, 1980

No abstract.

Polymorphisms in the human cytochrome P-450 1A1 gene (CYP1A1) as a factor for developing acne.

Paraskevaïdis A, Drakoulis N, Roots I, Orfanos CE, Zouboulis CC Department of Dermatology, University Medical Center Benjamin Franklin, Free University of Berlin, Germany.

Dermatology 1998;196(1):171-5

Cytochromes P-450 are a supergene family of enzymes involved in the metabolism of a wide range of endogenous and foreign compounds. The existing genetic variations of the distinct isozymes lead to interindividually different metabolic capacity. Since vitamin A, endogenous retinoids and their natural metabolites are morphogenic for the sebaceous gland, we investigated the polymorphisms of cytochrome P-450 1A1, as being one of the most active isozymes involved in their interconversion. From the known mutations, two were investigated; an additional cleavage site for MspI in the 3'-flanking region identified as a thymine-to-cytosine transition 1,194 bp downstream of exon 7 (m1) and an adenine-to-guanine transition at position 4889 in exon 7 (m2). We studied 96 acne patients for m1 and m2 mutations by restriction fragment length polymorphism and allele-specific polymerase chain reaction, respectively, and compared the results with 408 reference individuals. No statistically significant difference was found in the distribution of m2 alleles; the frequency was 3.13 and 3.06% of the alleles, respectively (odds ratio = 1.02, confidence limits 0.41-2.52, $p = 0.96$). In contrast, a trend to an overrepresentation of m1 alleles in acne patients was observed; allele frequency was 8.33 in the patients and 6.99% in the control subjects, respectively (odds ratio 1.21, 95% confidence limits 0.68-2.16, $p = 0.52$). As the m1 mutation might define a marker for alterations on regulatory sites, the biological efficacy of natural retinoids could be greatly impaired by their rapid metabolism to inactive compounds. The resulting deficit of active natural retinoids may lead to abnormal sebocyte differentiation and hyperkeratinization of the follicular canal implicating the development of acne in some patients.

Toxic doses of vitamin A for pityriasis rubra pilaris.

Randle HW, Diaz-Perez JL, Winkelmann RK

Arch Dermatol 1980 Aug;116(8):888-92

Seven patients who were disabled by pityriasis rubra pilaris were given toxic doses of oral vitamin A (1 million IU/day in six of the seven patients) for five to 14 days. Within 72 hours, the patients began to exfoliate the hyperkeratotic and keratodermatous lesions. The desquamative process was completed between ten and 14 days. The skin remained erythematous for several months before assuming a normal color. The skin of six of the seven patients was virtually cleared by the treatment, and none suffered a relapse of the pityriasis rubra pilaris. Serial skin biopsy specimens showed evidence suggestive of an accelerated turnover rate of epidermal cells during treatment. Transient abnormalities of liver function test results were noted in two patients.

Scientific American Medicine.

Rubenstein E and Federman D

Scientific American Inc, New York, NY, 1984. P2:1:3.

Differential rates of conversion of testosterone to dihydrotestosterone in acne and in normal human skin--a possible pathogenic factor in acne.

Sansone G, Reisner RM

J Invest Dermatol 1971 May;56(5):366-72

No abstract.

[Retinotherapy of skin diseases]. [Article in French]

Saurat JH

Presse Med 1994 Nov 5;23(34):1551-3

The discovery of retinoid receptors has contributed greatly to our understanding of the mechanism of action of vitamin A. The organism produces at least two ligands from ingested vitamin A which act as hormones modulating the activity of numerous genes via their nuclear receptor. These ligands are produced locally by target cells from retinol and retinaldehyde. These advances do not respond to the clinicians' interrogation as to why 13cis retinoic acid blocks sebaceous secretion and cures severe acne while other known retinoids are ineffective. Current research would suggest that the expression of nuclear receptors is not altered in skin diseases but that upstream anomalies in the intracrine system (enzymes and binding proteins) could be involved. Clinically, teratogenic risks are a major obstacle to the oral administration of retinoids and the future in skin diseases lies most likely in topical applications.

Some observations on the sugar metabolism in acne vulgaris, and its treatment by insulin.

Semon H and Hermann F

Br J Derm 52:123-8, 1940

No abstract.

Letter: Pyridoxine therapy for premenstrual acne flare.

Snider BL, Dieteman DF

Arch Dermatol 1974 Jul;110(1):130-1

No abstract.

[Recommendations for treatment of acne vulgaris]. [Article in German]

Stogmann W G. v. Preyer'sches Kinderspital, Wien, Osterreich.

Padiatr Padol 1993;28(3):A33-5

Acne vulgaris is by far the most prevalent of adolescent skin disease, involving 60-80% of the teenage population. By androgen-stimulation the production of sebum is increased and by hyperkeratinisation the canal of the pilosebaceous follicle will be closed, thereby causing formation of comedones. These will get infected with Propionibacterium acnes. The treatment of acne vulgaris therefore consists in 4 steps: sebosuppression (with Benzoylperoxid), keratolysis (with Vitamin A-acid and Azelainacid), bakterioistasis and stopping inflammation (with antibiotics). A mild cure of the affected skin is necessary too.

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