

ABSTRACTS FROM CURRENT LITERATURE

Lack of efficacy of Polysorbate-60 in the treatment of male pattern baldness, Groverman HD, Ganiats T and Klauber MR : Arch Int Med, 1985; 145 : 1454-1458.

Few medical conditions over the centuries have been more replete with claims of dramatic cures than male pattern baldness (MPB). Research on the subject had been scanty. MPB has a complex pattern of inheritance suggestive of autosomal dominant transmission with variable penetrance and with multigene distribution. Currently, there is no effective and safe medical therapy for the condition. Topical oestrogens, oral and topical minoxidil have been reported to be effective. After the reported successful use of Polysorbate-60 in two studies, it came to be marketed as a baldness remedy. To confirm this, the authors conducted a double-blind placebo controlled trial. A photographic and objective scale measurement system was developed to assess new hair growth. No significant difference was detected between subjects treated for 16 weeks with polysorbate-60 and control subjects treated with glycerine. Of the 141 subjects who completed the trial, 25% perceived that they grew new hair, 67% said they did not and 8% were uncertain. Subjectively reported new hair growth did not correlate with the objective measurements indicating that the placebo effect may be a major factor in reports of baldness cures

Blushan Kumar

Effect of vitamin A and its derivatives on collagen production and chemotactic response of fibroblasts, Hein R, Mensing H, Muller PK et al : Brit J Dermatol, 1984; 111 : 37-44.

The effect of vitamin A and its derivatives on differentiation of ectodermal cells has been well studied. It is now used in various disorders of keratinization and as an anti-neoplastic agent.

But its effect on mesenchymal cells has not been studied in detail. In this study, vitamin A and several other retinoids were added to fibroblast cultures in order to study possible alterations in biochemical properties and cellular responsiveness. The proliferation of cells was inhibited as the concentration of retinoids increased from 10^{-9} to 10^{-5} mol/L. Non-collagenous protein synthesis and production of both type I and type III collagen were decreased. The chemotactic response of fibroblasts to fibroblast-conditioned medium was markedly reduced in the presence of retinoids.

K Pavithran

In situ immunological characterization of the infiltrating cells in positive patch tests, Ralfkiaer E and Wantzin GL : Brit J Dermatol, 1984; 111 : 13-22.

The importance of Langerhans cells in the initiation and maintenance of contact allergic dermatitis is well established. There is only a limited information about the role of other types of lymphoid cells in contact dermatitis. This study was aimed to find out the cell types in the infiltrates at the sites of positive patch tests by immunoenzymatic labelling of lymphocytes and accessory cells in frozen sections with monoclonal antibodies. In 17 patients, the infiltrate consisted of T cells admixed with Langerhans cells/indeterminate cells but in 2, there were also many B lymphocytes which were accompanied by dendritic reticulum cells forming B-cell follicles. The ratio between T-helper and T-suppressor cells varied considerably. In all patients the infiltrating T cells expressed HLA-DR antigen. Transferrin receptors were identified on the infiltrating T-cells in biopsies from nine patients. These data support the functional significance of Langerhans cells in contact allergy. An involvement of

B-cells and B-cell accessory cells in the pathogenesis of contact allergic reactions is also suggested. The presence of dendritic reticulum cells in the skin infiltrates from positive patch tests may reflect a functional implication of the skin in the development of B-cell memory.

K Pavithran

Tissue specific autoantibodies and autoimmune disorders in vitiligo and alopecia areata : a retrospective study, Korkij W, Soltani K, Simjee S et al : J Cutan Pathol, 1984; 11 : 522-530.

A retrospective analysis of the laboratory reports of tissue-specific autoantibodies (TSA) in 38 patients with vitiligo, using indirect immunofluorescence procedure employing monkey tissue as substrate revealed one or more TSA in 39% of the serum samples. Thyroid antibodies were detected with a greater frequency in both vitiligo and alopecia areata, as compared with the normal population. 58% of the patients with vitiligo and 28% of the patients with alopecia areata had one or more detectable TSA.

K Pavithran

Pilar dysplasia overlying two neurofibromas of the scalp, Henkes J, Ferrandiz C, Peyri J et al : J Cutan Pathol, 1984; 11 : 65-70.

A 23-year-old male with Von-Recklinghausen's disease had 2 localized areas of darker, shiny, dry and rippled hairs on the scalp. These hairs were arranged in bundles disposed in different directions and were impossible to comb. The hair diameter was wider than normal. Underlying these 2 areas, there were 2 subcutaneous nodules of gelatinous consistency which histologically proved to be neurofibromas. The proliferating connective tissue extended towards the upper dermis and surrounded the pilar structures adopting a striking perifollicular arrangement. The circumscription of the abnormal hair to the areas of the scalp covering the neurofibromas and the special arrangement

of the neurofibroma surrounding the pilar structures suggests that the pilar dysplasia noted in this case may be considered as secondary to the alterations in the underlying mesenchymal structures represented by the mesodermal component of the neurofibroma, although a mechanical factor of compression caused by the special perifollicular arrangement of the neurofibroma cannot be excluded.

K Pavithran

Actinic granuloma. An ultrastructural study of 2 cases, Moreno A, Salvatella N, Guix M et al : J Cutan Pathol, 1984; 11 : 179-183.

The term actinic granuloma was coined by O' Brein in 1975 to define an inflammatory, annular lesion developing in the dermal connective tissue damaged by sun and heat. Typical macroscopic findings include papules and annular lesions with atrophic centres, while light microscopy shows a post-reactive central zone with absence of elastic fibres, a peripheral histiocytic or granulomatous reaction digesting the elastic fibres and a non-inflammatory external area of actinic elastosis. This report describes ultrastructural findings in 2 cases of actinic granuloma. The changes observed at the periphery of the lesion and in the elastic fibres in the early stage of damage were similar to those described in actinic elastosis. Later, an histiocytic reaction which was apparently directed against the damaged elastic fibres was observed. The ultra-structure confirmed the light-microscopic findings, but did not clarify the aetiology of the lesion or its relation to granuloma annulare.

K Pavithran

Azelaic acid (Comment), Breathnach AS, Nazzaro-Porro and Passi S : Brit J Dermatol, 1984; 111 : 115-120.

Azelaic acid is a naturally occurring straight chain 9-carbon atom saturated dicarboxylic acid. It can be prepared by disruptive oxidation of ricinoleic acid and occurs in rancid oleic acid.

It is non-toxic and non-teratogenic. Interest in the biological activity of azelaic acid arose originally with the observation that hypopigmentation seen in pityriasis versicolor is secondary to the damage to melanocytes by some metabolic product produced by the action of *Pityrosporum* on skin surface lipids. These products are diacids and they exert antityrosinase activity in vitro. A cream containing 15-20% azelaic acid was found to be effective in the treatment of melasma and post-inflammatory melanosis, when applied topically. Subsequently, azelaic acid was found effective in the treatment of lentigo maligna and malignant lentigenes. But it has no effect on normal skin of whatever degree of pigmentation, nor has it any effect on freckles, senile lentigenes or pigmented nevi. It is concluded that azelaic acid exerts its effect only upon hyperactive or abnormal melanocytes. Experimentally, azelaic acid causes significant retardation of the melanoma tumour growth and prolongs the life. Recent results show that azelaic acid has a biological and cytotoxic effect on human malignant melanocytes. Still later, a 15% cream of azelaic acid applied for 3-9 months was found beneficial in cases of acne vulgaris including severe nodulocystic forms.

K Pavithran

Cherry hemangioma; an SEM study, Sala F, Crosti C, Menni S et al : J Cutan Pathol, 1984; 11 : 531-535.

Ten lesions of cherry angiomas were removed by punch biopsy and the specimens were examined by a scanning electron microscope which provides a tridimensional view of the entire lesion and of the vascular lumina. The results revealed that the capillary haemangiomas were located immediately underneath the epidermis and were well differentiated from the surrounding tissue. The cross-sectioned vascular lumina contained blood cells and fibrin deposits. These were surrounded by bundles of thin collagen fibres. At higher magnification, it was possible

to observe the details of vascular spaces. The endothelium was made up of irregularly spaced endothelial cells, which were partially projecting into the central lumen. Villous projections corresponding to pedunculate processes observed with the transmission electron microscope were also seen.

K Pavithran

Erythromelalgia following pergolide administration, Monk BE, Parkes JD and Du Vivier A : Brit J Dermatol, 1984; 111 : 97-99.

Erythromelalgia is an uncommon disorder characterized by intermittent or persistent and sometimes painful erythema and heat of the extremities. The mechanism of erythromelalgia is unknown. The authors report 2 elderly patients with Parkinsonism who developed erythromelalgia after pergolide—an ergot derivative therapy. Erythromelalgia has not previously been reported in association with the use of pergolide, though it has been noted in patients with Parkinsonism who received bromocriptine, an agent structurally and pharmacologically related to pergolide. The vasoconstrictor effect of ergot alkaloids is more marked on the post-capillary than the pre-capillary vessels. This effect might account for the apparent paradox of vascular dilatation seen in erythromelalgia being provoked by a vasoconstrictor such as ergoline.

K Pavithran

Recovery from porphyria cutanea tarda with no specific therapy other than avoidance of hepatic toxins, Topi GC, Amantea A and Griso D : Brit J Dermatol, 1984; 111 : 75-82.

Porphyria cutanea tarda is the commonest type of porphyria and it is characterized by cutaneous fragility, high levels of porphyrinuria and damage to the liver. Though various drugs have been tried for the treatment of PCT, little is known of the natural course of the untreated disease, though there are isolated descriptions of

remissions after stopping the ingestion of drugs or alcohol. Other than the avoidance of hepatic toxins, the only treatment to which these patients were submitted, was that of the so called hepato-protectors (folinic acid etc). Those who showed clinical and biochemical evidence of improvement were observed for more than one year, and those who showed no improvement were treated with specific therapy such as phlebotomy or chloroquine. Sixteen cases of PCT (fourteen sporadic and two familial) in which cutaneous and biochemical abnormalities improved without any specific therapy other than the avoidance of hepatic toxins are reported in this article. The authors conclude that the metabolic defect in PCT is potentially reversible, depending on the exposure to exogenous hepatic toxins. To elucidate fully the relationship between the enzymatic defect and exogenous pathologic factors, serial monitoring of all the enzymes of the bioynthetic chain of haem would probably be necessary in various tissues with a prolonged patient follow-up.

K Pavithran

Perforating lichen planus, Hanau D and Sengel D : J Cutan Pathol, 1984; 11 : 176-178.

An unusual variant of lichen planus is reported in a 52-year-old woman who presented with violaceous papules suggestive of lichen planus and lichen nitidus on the wrists and buttocks. Histopathology revealed 2 features : the classical picture of lichen planus; and an area of perforation of the epidermis with a rectilinear channel, bordered by hypertrophic, highly eosinophilic epithelial cells, melanophages and fibrillar material. In the dermis, the infiltrate was typical of lichen planus. A parakeratotic cap covered the outlet of the channel. Orcein Giemsa stain revealed absence of elastic fibres in the infiltrate zone. All the features of trans-epidermal elimination process were present in perforating lichen planus.

Pathophysiologically, it is probably the hyaline bodies, particularly abundant at the base of the perforation, which constitute the foreign material. Their high concentration could irritate the dermal-epidermal junction and consequently initiate the perforation of the epidermis.

K Pavithran

Experimental chronic vaginal candidosis in rats, Sobel JD, Muller G and McCormick JF : Sabouraudi a, 1985; 23 : 199-206.

There has been surprisingly little progress in the understanding of the pathogenesis of vaginal candidosis in women. Although an animal model of experimental vaginal candidosis has been available for several years this model has been used to study the efficacy of antifungal agents in eradicating acute vaginitis. So the authors induced chronic vaginal candidosis to study natural history of the infection. A striking feature of the model was the hormonal dependence. It was impossible to induce infection after castration; however, within 48 hours of administration of oestrogen, the infection was readily established. Similarly, the infection cleared when the weekly maintenance dose of oestrogen ceased. Hormonal dependence of the model is analogous to the natural infection in women in that candidal vaginitis is extremely rare before menarche and is less common following menopause. Similarly, candidal vaginitis is more frequent during pregnancy and symptoms are characteristically exacerbated during the week before menstruation. Oestrogen receptors have been identified in the cytosol of *C. albicans* blastospores, and experiments in vitro have already shown that oestrogen stimulated exfoliated vaginal epithelial cells have a greater avidity for candida adherence than the non-stimulated cells. Only a small inoculum is known to be required to induce experimental vaginitis and this suggests that small numbers of candida may be capable of causing vaginal colonisation in

humans. Histological studies have confirmed that the rats so infected and with long-term vaginal carriage of *Candida albicans* have true chronic infection with extensive mycelial formation and superficial mucosal invasion.

Bhushan Kumar

Immunopathologic mechanisms in pemphigus and bullous pemphigoid, Jordon RE, Kawana Sand Fritz KA : J Invest Dermatol, 1985; 85 (Suppl) : 725-785.

Pemphigus and bullous pemphigoid are members of the chronic non-hereditary autoimmune blistering skin diseases of man. All forms of pemphigus share the histopathologic feature of acantholysis or loss of cohesion of epidermal cells. Pemphigus an intra-epidermal blistering disease, is characterised by auto-antibodies reactive with antigens located in the intercellular space or on the surface of epidermal cells. These antibodies which have recently been shown to activate complement, appear to be the cause of the basic pathologic process of pemphigus, acantholysis. The complement system and the plasminogen-plasmin system may be important mediators in the detachment of epidermal cells. Bullous pemphigoid, a sub-epidermal blistering disease is characterised by auto-antibodies reactive with an antigen located in the lamina lucida region of the basement membrane zone. These auto-antibodies which will avidly fix complement, appear to mediate sub-epidermal separation by attraction of a variety of inflammatory cells. Anaphylatoxins released by activation of C4 and C3, or specific IgE antibodies, may activate mast cells with release of ECF-A attracting eosinophils with activation of C5, C5a is released which could attract polymorphonuclear leucocytes. Antigen-specific lymphocytes which can also contribute histamine releasing substances, may also be involved. The exact mechanism by which epidermis separates from the dermis in bullous pemphigoid remains unresolved.

Bhusahn Kumar

Immunopharmacology of the atopic diseases, Hanifin JM, Buller JM and Chan SC : J Invest Dermatol, 1985; 85 : 1615-1645.

The atopic conditions, atopic dermatitis, asthma and allergic rhinitis may arise as a result of infiltrating bone marrow derived cells into the skin or respiratory mucosae. Release of inflammatory factors from these cells could account for the cutaneous vascular instability and pruritus in atopic dermatitis. Erythema and itch have been induced by experimental stress interviews and by blind food challenges. In the latter, increased plasma histamine was detected and correlated with cutaneous reactions.

Basophils from patients with atopic dermatitis have increased histamine release after exposure to immunologic or non-immunologic lectin stimulus. This increased releasability may relate to inadequate cyclic AMP regulation of cell function. The authors have found that leucocytes of patients with atopic dermatitis have elevated phosphodiesterase activity and consequently reduced intracellular cyclic AMP. Exposure of cells to a phosphodiesterase inhibitor caused considerable reduction in histamine release. Similarly, exposure of atopic B lymphocytes to a phosphodiesterase inhibitor greatly reduced the high spontaneous Ig E synthesis in mononuclear leucocyte cultures.

Elevated leucocyte phosphodiesterase activity may serve as a marker also for the atopic diathesis. The authors found elevated enzyme activity in umbilical cord blood from newborn with atopic parents suggesting that this defect may relate to a genetically determined defect.

Defects of regulatory mechanisms in immune and inflammatory cells may help explain the seemingly disparate disorders of physiologic, pharmacologic and immunologic systems in atopy.

Bhushan Kumar

Effect of various antibiotics on gastro-intestinal colonization and dissemination by *Candida albicans*, Kennedy MJ and Volz PA : Sabouraudia, 1985; 23 : 265-273.

Oral antibiotic treatment disrupts the ecology of the indigenous intestinal microflora, allowing *Candida albicans* and other fungi to overpopulate the GI tract and subsequently pass through the intestinal mucosa to initiate systemic dissemination. In the present study, mice were treated orally with various antibiotics to determine which members of the indigenous intestinal microflora normally suppress *Candida albicans* colonization and dissemination from the GI tract. The mice were given penicillin, clindamycin, vancomycin, erythromycin and gentamicin for 3 days and then challenged orally with *C. albicans*. Penicillin, clindamycin and vancomycin but not gentamicin or erythromycin, decreased the total anaerobic bacterial population levels. All three of the former antibiotics allowed *C. albicans* to proliferate in the gut and subsequently disseminate from GI tract to visceral organs. The ability of *C. albicans* to associate with intestinal mucosal surfaces was also tested. It was found that antibiotics which reduced anaerobic population levels, but not enteric bacilli or aerobes, also predisposed animals to mucosal association by *C. albicans*. It is suggested that strictly anaerobic bacterial population which predominate in the gut eco-system are responsible for the inhibition of *C. albicans* adhesion, colonisation and dissemination from the GI tract.

Bhushan Kumar

Growth of *Candida albicans* in dexamethasone supplemented media, Ghannoum M, Burns G and Abu Elteen K : Sabourdia, 1985; 23 : 313-315.

The effect of glucocorticoids in enhancing pathogenicity of opportunistic fungi is a well established phenomenon. The action of these compounds in suppressing the host immune system is also well known. It has been claimed in many studies that steroids have a growth enhancing effect on the fungi. However, it is known that dexamethasone is not metabolised by *C. albicans* to any great extent, and that it is incorporated largely unchanged in the cell wall. So the authors studied the growth enhancing effect of dexamethasone on candida. *Candida albicans* grown in dexamethasone showed an apparent increase in dry weight. This increase, however, represents an artefact due to entrapment and incorporation of dexamethasone by the yeast. Thus, opportunistic infections by *C. albicans* which are promoted by dexamethasone must be due entirely to effects other than growth enhancement of the organism.

Bhushan Kumar