Indian J. Dermatol. Venereol. Leprol. 1989; 55 : 67-73

ABSTRACTS FROM CURRENT LITERATURE

Ultrasound transmission time: an in vivo guide to nail thickness, Finlay AY, Moseley H and Duggan TC: Brit J Dermatol, 1987; 117 : 765-770.

Human finger nail thickness was measured distally in 39 subjects using an adapted electronic micrometer, which is a new, simple, quick and accurate method. The ultrasound transmission time was measured both proximally and distally. The distal ultrasound nail transmission time correlated well with the micrometer measurements. There was a clear rank order of distal and proximal nail transmission time. The rank of order was thumb > index > middle>ring > little fingers. This ranking of transmission time was evident at proximal as well as distal sites. Male nails had greater transmission time than female nails on the ring and little fingers. Distal nail transmission time was 8.8% less than the proximal transmission time. There were no consistent changes in nail thickness with age. This study gives a preliminary evidence that ultrasound measurement of nail transmission may be used as a reliable guide to nail thickness.

Molykutty Francis

The treatment of Pthirus pubis infestation of the eyelashes, Burns DA: Brit J Dermatol, 1987; 117 : 741-743.

Pthirus pubis is the louse of pubic, axillary and body hair. It can also live in the beard and eyelashes, especially in children. There are different methods of treatment such as mechanical removal of the parasite with fine forceps, epilation of the involved lashes, cryotherapy under Wood's lamp, application of 20% fluorescein, yellow mercuric oxide ointment, physostigmine eye ointment or 1% gamma benzene hexachloride lotion. Any ointment preparation is effective because it interferes with the respiratory function of the louse by blocking its spiracles but it requires repeated application for days. Of all the available preparations, the organophosphorus insecticide malathione in an aqueous base is most effective and it is a non-toxic, non-irritant pediculicide and ovicide which requires only a single application. But it should be avoided in patients with a known sensitivity to parabens or fragrances.

Molykutty Francis

Drug-induced photo-onycholysis: Three subtypes identified in a study of 15 cases, Baran R and Juhtin L: J Amer Acad Dermatol, 1987; 17 : 1012-1016.

Three distinct types of photo-onycholysis were observed in fifteen patients who were on tetracyclines, psoralens or fluroquinolenes. Type I showed half moon shaped separation that was concave distally. Type II had a circular notch opening distally. In type III, the changes were located at the central part of the nail bed only. Ultraviolet irradiation of normal finger nails with varying wave lengths showed that 3-20% of the irradiation could penetrate the nails. The nails alone can be involved without involvement of the skin, since the nail acts as a convex lens. In addition, melanin is sparse in the nail bed, sebaceous glands are absent in the subepithelial areas and the stratum granulosum is absent. Discoloration of the nails may be due to extravasation of blood or due to keratin dust. The terminal vessels, capillaries or glomus bodies may play

a role in the pathogenesis of pain associated with onycholysis.

Molykutty Francis

Human epidermal Langerhans' cells in bullous pemphigoid, Emtestam L, Hovmark A, Lindberg M et al: Acta Dermato-Venereol (Stockh), 1987; 67 : 529-532.

Epidermal analysis using OKT6 monoclonal antibodies on light microscopy and electron microscopy was done in seventeen patients with bullous pemphigoid and in eighteen controls. In the biopsies from the bullous pemphigoid patients there was a significant increase in the number of epidermal OKT6 positive cells in the diseased skin compared with the macroscopically uninvolved skin and in controls. In both macroscopically uninvolved and involved skin of bullous pemphigoid patients, a higher percentage of the OKT6 positive cells were found close to the basal membrane compared to the controls, denoting a redistribution of Langerhans' cells towards the basal layer of the epidermis in bullous pemphigoid. Redistribution of the Langerhans' cells may be explained in two ways. It may be due to the presence of complement and immunoglobulins in the basal membrane zone in bullous pemphigoid, since Langerhans' cells carry receptor for them. Another view is that the redistribution within the epidermis is a primary event and that Langerhans' cells may be involved in the detection and processing of the antigen localised at the basal membrane zone.

Molykutty Francis

Human papilloma virus frequency in normal cervical tissue, Gergely L, Czegledy J and Hernady Z : Lancet, 1987; II : 513.

The authors screened 42 cytologically negative (Papanicolaou staining degrees 1 or 2) untreated women for human papilloma virus (HPV) types 6, 11, 16 and 18 by in situ hybridisation under stringent conditions according to Schneider's method. For a positive control, histologically proved cases of dysplasia, carcinoma in situ and condyloma acuminatum were screened. All the control patients were HPV positive, while in the study group 57% were HPV positive. It is known that HPV-positive cases have a ten-fold greater risk of developing associated cervical intraepithelial neoplasia than HPV-negative women. Virologically, the authors attach importance to screening the population to identify at-risk cases.

Jayakar Thomas

Pathogenesis of post-herpetic neuralgia, Schon F, Mayer ML and Kelly JS : Lancet, 1987; II : 366-368.

The prevailing hypothesis of post-herpetic neuralgia (PHN) is a reduction in the number of large myelinated axons and an increase in small unmyelinated fibres. Recent work on various painful peripheral neuropathies has not confirmed any consistent association between pain and large fibre loss. The authors put forward a model of PHN based on the physiological effects of herpes simplex type 1 virus infection of rat dorsal root ganglion neurons in tissue culture. This virus causes these normally electrically silent neurons to produce spontaneous action potentials. Furthermore, pairs of neurons tend to have synchronised discharges. This coupling is not synaptically mediated, but it is due to the presumed electrical junctions. The authors hypothesize that PHN is caused by abnormal impulses arising in the dorsal root ganglion neurons as a direct result of viral infection, similar to that seen in herpes simplex infection.

Jayakar Thomas

Immunotherapy versus chemotherapy in localised cutaneous leishmaniasis, Convit J, Rondon A, Ulrich M et al: Lancet, 1987; I : 401-404.

In a randomised trial, a combination vaccine consisting of live BCG together with

killed *Leishmania* promastigotes was compared with a standard antimonial regimen in 94 patients with localised cutaneous leishmaniasis. Three vaccinations over 32 weeks gave a similar cure rate (94%) to three 20-day courses of meglumine antimonate, 50 mg/kg body weight daily. In the immunotherapy group side effects such as necrosis and shallow ulcers at the site of vaccination were few (5-8%) and slight, whereas in the chemotherapy group the side effects were frequent (52.4%) and included bone and muscle pain, fever, headache and cardio-vascular disturbances. This study shows that in localised cutaneous leishmaniasis immunotherapy and chemotherapy are about equally effective, but that immunotherapy has a much lower rate of side effects. The authors conclude that immunotherapy is a low-cost, low-risk alternative to chemotherapy in localised cutaneous leishmaniasis, applicable by primary health services in rural areas.

Jayakar Thomas

Shulman syndrome, a scleroderma subtype caused by *Borrelia burgdorferi*, Stanek G, Konrad K, Jung M et al: Lancet, 1987; I: 1490.

The authors report a case of a 50-year-old man with a progressive swelling and induration of the skin predominantly involving the extremities and resulting in flexion contractures. He gave history of three tick bites 4 months before the onset of his illness. Histopathological examination of the skin was consistent with Shulman syndrome (eosinophilic fasciitis). Specific IgG antibodies to *B. burgdorferi* were detected by ELISA. Although clinical improvement was seen after treatment with doxycycline and penicillin, IgG antibody titre did not show any change even after one year. The authors conclude that eosinophilic fasciitis, a sceleroderma subtype may be another expression of *B. burgdorferi* infection. As with other features of Lyme's borreliosis, such as acrodermatitis chronica atrophicans, specific antibody titres can be observed over a long period of time.

Jayakar Thomas

A controlled trial of weekly ultrasound therapy in chronic leg ulceration, Callam MJ, Harper DR, Dale JJ et al: Lancet, 1987; II: 204-205.

Ultrasound has been shown to be beneficial in wound healing. Experimental studies have shown that ultrasound can stimulate protein synthesis and that it influences the cellular activity of fibroblasts which enhances healing at the sites of injury. In a controlled trial to ascertain whether ultrasound given weekly in conjunction with a standard treatment for chronic leg ulcers improves the rate of healing, 56 patients were given a standard treatment (paste impregnated bandage and a self-adhesive elastic bandage) and another 52 patients were given the standard treatment with ultrasound weekly. After 12 weeks, the proportion of ulcer healed was 20% greater in the ultrasound group than in the control group. The ultrasound therefore seems to be useful in the healing of chronic leg ulceration when used as an adjunct to a standard regimen that provides compression, besides the already reported beneficial effects in the treatment of pressure sores and in the preparation of trophic ulcers for skin grafting.

Jayakar Thomas

Methotrexate and retinoids in combination for psoriasis, Harrison PV, Peat M, James R et al: Lancet, 1987; II: 512.

Methotrexate and retinoids, individually both useful drugs, are sometimes used in combination to treat patients with resistant psoriasis. However, there is concern that toxicity may be more of a problem with such a combination therapy. The authors have studied methotrexate metabolism in a patient, before and during retinoid therapy, and observed an increased methotrexate level which, in a patient on combination therapy,

might predispose to toxicity. There is debate whether or not an increased methotrexate level might predispose to hepatotoxicity, but there is evidence that it might be relevant for cutaneous toxicity like epidermal necrosis. The authors advise that caution should be observed in patients receiving methotrexate retinoid comibation therapy, particularly in those at risk, including the elderly patients with poor renal function, or patients receiving other drugs such as anti-inflammatory preparations.

Jayakar Thomas

Allergic agent in contact dermatitis from *Holligarna ferruginea*, Srinivas CR, Kulkarni SB, Menon SK et al: Contact Dermatitis, 1987; 17 : 219-222.

Holligarna ferruginea and other plants of the genus *Holligarna*, like *H. arnottiana* and *H. grahami* may be an important cause of occupational dermatitis in India. The authors have studied 10 patients who presented with allergic contact dermatitis to *H. ferruginea*. They had lesions mainly over the exposed areas which developed 2-7 days following contact with the exudate. Closed patch testing was performed on the back with one drop of 2% w/v solution of the exudate extract. Acetone was used as control. Test sites were examined at 24, 48 and 72 hours. Thirty-five informed volunteers were also subjected to similar patch testing. The same solution was used to sensitize 6 albino rats. The solution was applied weekly for 3 weeks and they were examined 24, 48 and 72 hours after each application. Nine of the 10 patients with features of allergic contact dermatitis showed positive patch tests. Five of 35 volunteers were patch test positive. All the 6 rats were sensitized following the third application of the allergen. The positive patch test results in 5 of the 35 asymptomatic volunteers indicate that a significant number of individuals are likely to develop dermatitis following contact in the future. Sensitization of all the 6 albino rats following the third application suggests a high sensitizing potential of the allergen. The authors have also done the chemical characterization of the active principle and found it to be 3-heptadecadienyl catechol which is structurally similar to the allergens of poison oak and ivy.

K Anitha

Esthiomene resulting from cutaneous tuberculosis of external genitalia, Naik RPC, Srinivas CR, Balachandran C et al: Genitourin Med, 1987; 63 : 133-134.

Esthiomene is usually associated with lymphogranuloma venereum. A less common association is with granuloma inguinale. Some authors believe that it is due to lymphatic stasis, but some others attribute it to an active chronic inflammatory process. The authors have reported a case of long-standing lupus vulgaris of the buttocks extending to the vulva resulting in esthiomene. A 22-year-old woman had multiple swellings on the buttocks and genitalia of 15 years' duration. These nodules had gradually progressed to produce irregular plaques with hyperkeratotic edges.There was induration of the vulva which gradually progressed to form large polypoidal masses. There was no significant lymphadenopathy. There was no history of fever, sexual abuse as a child or extra-marital sexual contact. The VDRL test and TPHA were negative. Tissue smear did not reveal Donovan bodies. Biopsy showed tubercular granuloma. The patient responded well to partial vulvectomy and antitubercular treatment. Tuberculosis of the external genitalia is rare, and is usually secondary to pulmonary tuberculosis. But in this case there was no evidence of tuberculosis elsewhere. Esthiomene has not been reported as a sequel of cutaneous tuberculosis previously.

K Anitha

Palmo-plantar lesions in pauci-bacillary leprosy: Unusual clinical expressions, Rajendran N : Ind J Leprosy, 1987; 59 : 188-191.

Certain areas of the body such as the axilla and groin are described as zones immune to

leprosy. Even though palmo-plantar skin is not included in this category, it is relatively rare to get leprosy lesions in these sites alone. It has been established that temperature of nerve bed is directly related to the depth of the tissues. Thus the nerve bed temperature of the palmo-plantar regions is higher than that of other superficial skin regions. So palmo-plantar lesions are less likely. The authors describe three patients with anaesthetic plaques in left palm, right sole and both palms and soles respectively. Skin biopsy showed histopathologic features of borderline tuberculoid leprosy.

Sree Rekha

Mycophenolic acid for psoriasis, Warren E and Colleen M : J Amer Acad Dermatol, 1987; 17 : 963-977.

Mycophenolic acid is a specific inhibitor of enzymes converting inosine monophosphate to xanthosine monophosphate and also xanthosine monophosphate to guanosine monophosphate. It is a specific inhibitor of guanine synthesis. The clinical efficacy of the drug may in part be due to an inhibition of leukotactic factors — leukotriene B_4 and 12-hydroxyeicosatetraenoic acid (12-HETE) in psoriatic skin. In vitro, mycophenolic acid has been found to be a potent inhibitor of DNA synthesis and cell-proliferation as methotrexate and anthralin. When given orally or parenterally, the drug is rapidly conjugated in the liver to mycophenolic acid glucuronide. Free acid is necessary for the antiproliferative action. So tissues which have high levels of beta glucuronidase activity are capable of hydrolysing the glucuronide to free and active mycophenolic acid. Epidermis of involved skin with psoriasis is known to possess high levels of beta glucuronidase. The authors conducted a study on patients refractory to conventional therapy. All types of psoriasis excluding exfoliative psoriasis were included. The age of the patients, varied between 20 and 73 years. Medicine was supplied in 400 mg capsules, and upto 7368 mg daily was given at 6, 8, 12, 24 hour intervals. The dosage level was reduced after the maximum clearing was achieved. No other systemic anti-psoriatic medication was allowed. All the patients responded positively to the maximum tolerated dose. One third of the patients could take the drug without having any side effects. The side effects included gastro-intestinal upsets, increased incidence of viral infections and hematological abnormalities. The observations confirm that this is an effective psoriasis suppressant. Although this drug is not as effective as methotrexate it can be given safely to patients who cannot take methotrexate, and those who are not ideal candidates for PUVA, retinoids and other systemic therapy.

Sree Rekha

Stimulatory effect of prostaglandin E_2 on the configuration of normal human melanocytes in vitro, Tomita Y, Iwamoto M, Masuda T et al : J Invest Dermatol, 1987; 89 : 299-301.

Melanocyte function to make the melanin pigment in the skin is highly specialised. The regulation of the mechanism of melanin synthesis and hyperpigmentation after inflammation has not yet been clarified. Prostaglandin E_1 and PGE_2 were reported to stimulate melanogenesis in vitro, and also suggested to be involved in the post-inflammatory skin pigmentation. The authors examined the direct effect of PGE_1 and PGE_2 on normal human melanocytes in vitro. Human melanocytes were isolated from the roof of suction blisters and cultured. Three days after culturing, 5.6 ½M of PGE_1 or PGE_2 was added to the culture medium and the culture continued for 6 days. Melanocytes became swollen and more dendritic when they were cultured with PGE_2 but not with PGE_1 although the amount of immunoreactive tyrosinase in the melanocytes did not appear to be increased markedly after these treatments. The authors suggest that PGE_2 may be one of the factors

responsible for the induction of post-inflammatory hyperpigmentation of the skin.

N Sasi

Topical minoxidil in male pattern baldness: effects of discontinuation of treatment, Olsen E and Weiner M: J Amer Acad Dermatol, 1987; 17 : 97-100.

Two or 3% topical minoxidil applied twice daily has been found to stimulate non-vellus hair growth in men with male pattern baldness. The growth is greatest during the first 8 months of therapy. There is no significant change in the vellus hair counts. In order to evaluate the changes in the scalp hair growth both during and after discontinuation of topical minoxidil, the authors studied 10 men with male pattern baldness who had been treated with 2% or 3% topical minoxidil for at least 4 months.

Objective assessment by the hair counts showed a significant increase in the non-vellus hair counts between baseline and 4 months of minoxidil use with a further increase on continued use, but on discontinuation of therapy, there was a mean loss of target area vellus, non-vellus and total hair. In 7 patients, the hair loss occurred wihtin 2 months of stopping the drug, the greatest amount of hair loss occurring in the first 6 months of discontinuation. In 4 patients the hair counts fell below baseline levels indicating a return of the natural balding process that was interrupted with topical minoxidil therapy. The authors therefore conclude that the effect of topical minoxidil in stimulating non-vellus hair growth is not sustained when the drug is discontinued and that patients with male pattern baldness require continued treatment with topical minoxidil in order to maintain a cosmetically acceptable response.

PB Haribhakti and Rita Macwan

Atypical crusted scabies, Wolf R and Krakowski A: J Amer Acad Dermatol, 1987; 17 : 434-436.

Crusted (or Norwegian) scabies usually affects patients who are immunologically deficient, physically debilitated or mentally retarded. The authors describe five such cases of crusted scabies but with an atypical presentation. All the patients showed pruritic, hyperkeratotic, erythematous, scaly plaques over the abdomen, back and extensor surfaces of the extremities resembling psoriasis. Involvement of the palms, soles and nails and lack of itching which is usually found in crusted scabies was absent in all but one patient. The diagnosis of scabies should thus be considered whenever a widespread, scaly, itchy dermatosis develops in a patient suffering from a malignant disease or in mentally retarded and physically debilitated patients.

PB Haribhakti and Rita Macwan

Treatment of junctional epidermolysis bullosa with epidermal autografts, Carter D, Lin A, Varghese M et al: J Amer Acad Dermatol, 1987; 17 : 246-250.

Effective therapy for junctional epidermolysis bullosa has been lacking todate. Blisters and erosions found in the disease are believed to be due to defective hemidesmosomes but the exact location of the defective gene causing hemidesmosome dysfunction is not known. Treatment thus can only be aimed at correcting the damaged skin. The authors have successfully treated chronic facial erosions in 3 children with junctional epidermolysis bullosa using epidermal autografts. Suction blisters were created on clinically uninvolved skin and keratinocytes were collected from the roof of such blisters, grown in tissue culture on collagen sponges and grafted onto facial erosions that were previously treated with 2% mupirocin ointment —

an antibiotic that eradicates cutaneous pathogens such as *Staphylococcus aureus* from chronic wounds. Complete reepithelialisation was achieved in 2 patients over 7 and 10 months respectively and partial reepithelialisation in the third patient in whom the treatment was still continued. Although epidermal autogrfts do not correct the basic defect in junctional epidermolysis bullosa, these can effect complete coverage of the chronic cutaneous defects. Healing of erosions decreases the risk of infection and markedly improves the function and cosmetic appearance of the eroded skin. Further, growing the keratinocytes on a collagen matrix facilitates handling of the grafts and enhances the healing process.

PB Haribhakti and Rita Macwan