HANSENÍASE: RESUMOS
HANSENIASIS ABSTRACTS

BACTERIOLOGIA, IMUNOLOGIA
BACTERIOLOGY, IMMUNOLOGY


Therefore, before such techniques can be undertaken as routine procedures they need further refinement and standardization so that they can be confirmed and carried out in other centres where similar facilities are available. The search for other metabolites which may be more specific in terms of being constituents of M. leprae or its metabolic profile, thus offering a higher and more rapid labelling, should be explored. A better understanding of the metabolic and energy needs of this fastidious organism may help in the selection of such compounds for isotope studies. It is also possible that isotopic techniques may provide a better understanding of the nutritional needs of M. leprae and thus help towards its cultivation.

From the editorial


A new approach in cultivation of Mycobacterium leprae in thyroxine treated Lowenstein-Jensen media is reported. The method has been proved to be successful as the organisms multiplied and remained viable in the thyroxine solution added at the bottom of the culture vial, for a period of 18 to 20 weeks of incubation at 37°C. This has been possible due to metabolic stimulating action of thyroxine sodium solution as well as diffusion of nutrients into solution from the medium. Intracutaneous inoculation of culture fluid on the surface of foot pad in cortisone treated mouse helped in rapid appearance of the specific lesion at the site within 20 days after injection. Both the intracutaneous method of inoculation and treatment of mouse with high doses of cortisone may play some role in shortening the period of development of such lesion.

Author’s abstract


The frequency of surface antigen of hepatitis B virus (HBs Ag) and the corresponding antibody (anti-HBs) has been researched in 553 patients with leprosy and 100 Senegalese blood donors. This study has been carried out by radio-immunona-ssay. HBs Ag has been found in the serum of 25.5 % of the hansenians as against 12 % of the controls whereas the presence of antibodies (anti-HBs) has been shown to be 44.1 % and 38 % respectively. HBs Ag and/or anti-HBs markers have been revealed in 67.1 % of the leprosy patients sera. The lepromatous forms more frequently

possess HBs Ag and/or anti-HBs (74.6%) than the tuberculoid forms (62.9%). No significant statistical difference with regard to sex, ethnic groups or mode of life have been discovered.

Author's summary


The hepatitis B virus markers, leprous patients.

The hepatitis B virus markers were studied on 553 lepromatous sera and 100 controls sera. HBs Ag detected by RIA were present on 25.4% of leprous and 12% of controls; the anti-HBs by RIA were revealed in 44.1% of patients out 38% of controls. The leprous was not carrying this markers were HBe Ag or anti-HBe positive. By this vertical study it appears that 2.4% of the cases presented recent or acute hepatitis; 23% were chronic carriers; 41.7% had been in times past infected but were cured and the third remaining had been infected but coat markers were absent, it is more than likely that is an old infected group. The study revealed no significant difference in hepatitis chronic forms frequency between lepromatous and tuberculoid patients.

Authors' summary


This study of the interaction between Mycobacterium leprae and the mycobacteriophage D29 showed that the viruses caused a patchy damage of cell wall structure and the accumulation in the host of internal crystalline structures. Whether the observed ultrastructural alterations were caused by the replication of D29 was not clear. Mitomycin C also caused the accumulation of crystalline structures in M. leprae.

Authors' summary


A longitudinal immunologic study of patients with indetermined type of leprosy was done. Two kinds of tests were used: lepromin-reaction and rosette-E formation together with the clinical aspects. Those were performed in 1973 and subsequently in 1937. A striking difference could be determined between the lepromin-positive patients and those who were negative (p < 0.01) in 1973 in regard to the rosette-E test, being even more accentuated that difference in 1977. At the same time there was correlations between the immunologic response and the evolution up to for. This evolution could be influenced by the specific treatment. The twist of lepromin-reacttions of patients with normal rosette-E tested en 1973 speak in favor of a better sensibility of that test "in vitro" as a prognostic sign.

Authors' summary
Hanseniasis abstracts


Immunologists and leprologists, in the prototype TDR scientific working group on immunology of leprosy (IMMLEP), have been meeting and stimulating and coordinating research towards a leprosy vaccine since 1974. At their first meeting in 1974, the leprologists and immunologists agreed upon a strategic plan to develop a leprosy vaccine to be ready for clinical trial in five years. This is a particularly important goal, since drug resistance has recently been shown to exist to dapsone, the only practical chemotherapy now available for leprosy. The third meeting of the IMMEP Scientific Working Group (SWG), in February 1976, reported encouraging progress and that the strategic plan was on schedule. Although in vitro cultivation of Mycobacterium leprae has still not been accomplished the supply of M. leprae from in vivo infected armadillos had been doubled, and killed organisms so obtained could be shown to produce cell mediated immunity in experimental animals and to protect mice from M. leprae infection. It is hoped that studies in man of the immune response to killed M. leprae may be underway before the end of 1978.

From the article


The ability of lepromatous macrophages to accept cytophilic antibodies was not damaged. Blood macrophages derived from both types of leprosy formed rosettes with cyto philic antibodies formed by goat sera. The rosette forming rates of tuberculoid (65.0%) and lepromatous macrophages (66.4%) were essentially the same as that of normal blood macrophages (68.8%).

Authors' abstract


Lymph node aspiration was performed from the inguinal group of lymph nodes in 16 patients having lepromatous or borderline leprosy. In the same group of patients impression smears of excised lymph node and slit smears of the skin were also studied. This study made it obvious that the aspiration biopsy technic gave similar information regarding the Bacteriologic (BI) and Morphologic Indices (MI) as the impression smears of excised lymph node. The technic of aspiration being simple and nontraumatic is recommended for the follow-up of patients on antileprosy drugs and in reactional phases.

Authors' summary

KRONVALL, G.;GLOSS, O.; BJUNE, G. Common antigen of Mycobacterium leprae, M. lepraemurium, M. avium and M. fortuitum in comparative studies


No. 21 mycobacterial antigens of Mycobacterium lepraemurium, M. avium, M. fortuitum, and M. leprae were compared in crossed immunoelectrophoresis using two different antibody sources, a serum pool from lepromatous leprosy patients (LSII) and a rabbit anti-M. smegmatis antiserum. M. lepraemurium, like M. avium, was found to contain the 21 A and 21 C determinants. M. fortuitum contained in addition a new type of determinant, 21 D. M. leprae antigen no. 21 carried the A as well as the B determinants, the latter found so far only in the leprosy bacillus. The separate taxonomic position of M. leprae, suggested by earlier studies of the no. 21 antigen, is further supported by the present results, which also demonstrate the potential use of submolecular heterogeneity for such investigations.

Authors' abstract


Authors' abstract


Hanseniasis abstracts


M-Y 16j agar slant was prepared by modifying M-Y 14b which has hitherto been used most widely in our experiments by increasing the amount of Na pantothenate and adding leucine, and the growth stimulating effect was investigated referring to the foregoing subculture experiments. The results revealed that the growth of M. leprae was stimulated remarkably in the primary isolation quite similarly to the subculture. This seemed to be resulted from stimulated biosynthesis of fatty acids by the leucine metabolism.

Authors’ summary


This study was carried out in Jilib, south of Somalia, on patients with lepromatous (57 cases) and tuberculoid (24 cases) leprosy; in each case a series of 6 skin-test antigens was employed (from M. tuberculosis, M. scrofulaceum, M. xenopi, M. africanum, N. farcinica, N. otiidis).

The results obtained showed an unexpected and anomalous high percentages of positive - reactions; the largest recorded mean diameter of induration was 100 mm to PPD-S from M. tuberculosis. The mean size with this antigens was 19.8 mm in lepromatous group and 11.1 mm in tuberculoid one. The most severe reactions occurred among lepromatous patients and in 5 cases ulceration was produced; ulceration occurred also in 3 tuberculoid patients after skin testing. Reactivity to the antigens varies from 75 % for M. tuberculosis to 3 % for M. farcinica in L group, while in T forms the percentage was respectively 70 % and 8 %; the most significant difference among two leprosy groups of patients it was found for testing with M. scrofulaceum with percentage of 73 % in L form and 41 % in T form and for M. xenopi with 26 % and 4 %A respectively.

Authors’ summary


E, EA and EAC rosetting techniques and Ig fluorescence were used in a study of receptor sites in cryostat sections of lesions through the spectrum of leprosy, and for comparison in some other mycobacterial and granulomatous lesions. Anti-Cs, and trypsin were used as blocking agents. Lymphocytes in borderline lepromatous leprosy produced EA adherence and IgC fluorescence indicating B type cells. Lymphocytes
in tuberculoid leprosy produced neither E or EA adherence and no fluorescence; these cells were presumed to be T cells. EAC and EA adherence was more marked in areas of macrophage infiltration, where there were few lymphocytes, than over the lymphocytes themselves. Two distinct patterns emerged: (i) EA binding together with IgG fluorescence was seen in active lepromatous leprosy and could be localised to the surface of individual macrophages, and (ii) EAC binding together with IgM fluorescence was seen in the granuloma of tuberculoid leprosy and sarcoidosis, but could not be definitely related to cell surface; rather it was diffusely spread over the whole granuloma; EA adherence was diminished by anti-C3 serum. Trypsin removed EA binding completely, but only diminished EAC ad-herence. It is suggested that the EA pattern indicates immunoglobulin receptors on macrophage and lymphocyte surfaces: and that the EAC binding (which is stronger than EA) involves Ca and IgM receptors at extracellular sites as well as C3 receptor sites on epithelioid cell surfaces. EA and EAC binding were enhanced in borderline tuberculoid leprosy in reaction and erythema nodosum leprosum, suggesting that immuno-globulin and complement receptor sites increase in number with enhanced hypersensitivity.

Authors' summary


The "Factor N-Anergic margin" theory is revisited after 40 years of being postulated. New methods and technics applied to this hypothesis could eventually contribute to the better knowledge of the immunology of hanseniasis and give new approaches to research in this field.

Adapted from the summary


In the present study we have estimated the serum levels of early, middle, and distal complement components, e.g., Clq, C3, C4, C5, C8, and C9 along with C1-inactivador and CH50 in patients with tuberculoid and lepromatous leprosy and have compared these results with the levels in healthy subjects as with levels in patients with other immune complex diseases. We have also analyzed the cryoglobulins present in the sera of these patients; they consisted of either a single or mixed IgG, IgB or fibrinogen in most instances. The component C3 was found in only one sample. It appears that unlike lupus nephritis, in which complement is activated by direct path in about 30% to 50% of leprosy patients, significant C3 complement consumption takes place primarily via the alternate pathway and is probably initiated by the aggregated immunoglobulins represented in cryoprecipitates. This is further supported by the study of serum factor B and its breakdown product (Ba) in these patients. The question of the role of the middle and distal complement components, such as C5, C8 and C9, during total hemolytic complement and C3 consumption in leprosy remains unanswered.

Authors' summary


Immunoglobulin levels in the ocular fluids have been estimated in normal subjects and lepromatous leprosy patients. In the normal tear, IgA is the major immunoglobulin while IgG is the only immunoglobulinulin detected in the aqueous humor. The immunoglobulin profiles in the tear and the aqueous humor in normal subjects are different. The mean IgA level in the tears of the lepromatous leprosy group is significantly lower than in the control patients. IgA and IgG levels are raised in the aqueous humor of some leprosy cases who had suffered from uveitis in the past and also in all cases with active endogenous uveitis.
Therefore, in lepromatous leprosy the pattern of immunoglobulin alteration in the tear and the aqueous humor is not parallel.

Authors’ summary


This paper deals with the relationship of Australia antigen (Au) to various subgroups of leprosy, in a total of 200 cases. Au was found to be present up to 4% in lepromatous leprosy, 2%/a in tuberculoid leprosy and lepra reaction, and 3% of antibody in lepromatous leprosy. Presence of antibody denotes past antigenemia. The quantitation of the antigen is done using the new technique of Electro-immuno-diffusion (EID) ou Laurell, synonymous with rocket technique. The persistence of the antigen is explained in the light of deranged immunological mechanisms.

Authors’ abstract


50 cases of leprosy belonging to various subgroups i.e. 10 tuberculoid, 25 leproma-tous leprosy, 10 lepra reaction, 5 dimorphic leprosy, and 25 cases or normal individual were subjected to agar gel electrophoresis. The slides were scanned by densitometry. It showed profound departure from normal in various fractions of electrophoretic patterns. All of them showed rise of gamma globulin. Albumin was markedly decreased in lepromatous leprosy and lepra reaction. In dimorphic leprosy Alfa-1, was decreased. Qualitative immuno electrophoresis was done by using antihuman serum raised in the laboratory, by immunising rabbits. It revealed changes in IgM and IgG arcs. Results are discussed and tried to explain on immunological derangement.

Authors’ abstract


Polymorphonuclear leukocyte motility, both vivo and in vitro, and reduction of Nitro Blue Tetrazolium was studied in tuberculoid and lepromatous leprosy patients and a group of lepromatous patients with erythema nodosum leprosum (ENL). A profound defect in random migration, chemotaxis, and chemokinesis was found in lepro-matous patients with and without compli-
Lymphoproliferative responses to *Mycobacterium leprae* and P.P.D. were measured in 23 lepromatous and borderline lepromatous leprosy patients and in 27 of their normal siblings. At the same time siblings HLA-D-identical with the patients were identified by the absence of a mixed-lymphocyte reaction. The 7 siblings who were HLA-identical to lepromatous patients responded as well to *M. leprae* as did the 20 HLA-non-identical normal siblings. In contrast, 22 of the 23 lepromatous patients failed to respond to *M. leprae* but responded normally to P.P.D. The specific unresponsiveness of lepromatous patients thus does not result from an HLA-linked genetic defect and the defective cell-mediated immune response to *M. leprae* seems to be acquired, not inherited. Lepromatous patients may be high responders to antigen shared by *M. leprae* and other microorganisms in whom a strong antibody response has blocked the induction of an *M. leprae* specific cell-mediated immune response.

Authors' summary


Incubation of human peripheral blood lymphocytes from normal healthy subjects with phytohemagglutinin (PHA), causes the reduction of the surface charge of a subpopulation of T cells by 1363 ± 242 e.s.u./cm². The affected subpopulation was predominant by the high charge-bearing cells identifiable with early (10 min) rosette-forming cells with sheep erythrocytes. Purified lymphocytes obtained from untreated bacillary-positive, lepromatous leprosy patients contained high charge-bearing T lymphocyte subpopulation. However, incubation with PHA did not result in the shift of electrophoretic mobility of these cells, suggesting the absence of interacting sites for the mitogen on the surface of these cells. The absence of mitogen-interacting sites is not an inherent trait of leprosy patients; the surface charge of lymphocytes from Dapsone-treated bacillary-negative subjects was reduced upon incubation with PHA. A close correlation was found between the

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number of cells whose charge alters on incubation with PHA and the transformation index obtained with this mitogen.

Authors' abstract


Groups of patients with lepromatous (57 cases) and tuberculoid (24 cases) leprosy have been skin-tested with a series of antigens from *M. tuberculosis*, *M. scrofulaceum*, *M. xenopi*, *M. africanum*, *N. farcini-ca*, *N. otididis*.

It was found that a reactional state with erythema nodosum leprosum occurred in 15 lepromatous cases after skin testing; these patients, and other 23 lepromatous patients who also had a reactional state in the previous course of the disease, have shown after skin testing a more severe reaction with painful swellings, vesicles and bullae at injection sites and ulceration in 5 cases; such severe skin reaction with ulceration also occurred in 3 cases of tuberculoid leprosy. The percentages of positive reaction in the group of the 19 lepromatous patients who have never shown, before or after skin testing, a reactional state were the lowest (with a mean size of 11,1 mm for *M. tuberculosis* and 6,6 mm for *M. africanum*) among each group tested with the mycobacteria antigens:

a) patients with tuberculoid leprosy (the mean size was 19,8 mm for *M. tuberculosis*; 11,5 mm for *JW. africanum*);

b) patients with pulmonary tuberculosis (mean size 12,4 mm for *M. tuberculosis*; 9,9 mm for *M. africanum*);

c) controls (mean size 13,8 mm for *M. tuberculosis*; 14,0 mm for *M. africanum*).

Authors' summary


A lymphocyte transformation test was performed adding Mitsuda antigen (lepromin) to the lymphocyte culture from the peripheral blood of 4 leprosy patients (2 borderline lepromatous and 2 lepromatous ones) and 6 control persons (1 Kimura disease patient, 1 kerion celsi patient, 2 latent syphilis patients and 2 normal controls-doctors). All 4 leprosy patients showed negative results, while 1 to 3% blast cells were observed in 5 of the control cases; the one case with Kimura disease showed a negative result. Only 12 to 21% blast cells stimulated by PHA were observed in the lepromatous patients.

Authors' abstract


Serum Iron and Total Iron Binding capacity were estimated on the sera collected from 45 leprosy patients attending the out-patient department of the Central JALMA Institute for Leprosy, Agra. The sera from 15 healthy subjects were included in the study as controls. Hypoferraemia was observed in lepromatous leprosy and was particularly marked during the reactive phase. Further investigations to elucidate the pathogenesis of anaemia in leprosy are being planned.

Authors' abstract


Radial or superficial peroneal nerve biopsies of 6 patients with tuberculoid or borderline-tuberculoid leprosy and 6 control nerve biopsies were examined by electron microscopy. Endoneurial blood vessels showed histopathology in all the leprosy patients. Changes, in particular, involved the basement membrane in postcapillary venules and venules. Multilayered parallel basement membranes, with collagen and ground substance, formed a thick coat ("hyaline zone") around the vessels. It is suggested that the zone inhibits passage of nutrients and metabolites and, thus, contributes to or is the main cause of the local destruction of (unmyelinated) nerve fibres and the lack of nerve fibre regeneration observed in this type of leprosy. The peri-vascular zone, presumably, is produced by pericytes in response to defects in the "blood-nerve barrier" of endoneurial vessels. Ingranulomata of leprosy skin lesions, a perivascular zone was not present.

The endothelium of endoneurial vessels, in affected nerves, generally was normal. Occasionally, however, gaps and fenestrations were seen and there were histological indications that leakage of blood plasma had occurred through the gaps and through the basement membrane of the endothelium.

Oclusion of endoneurial vessels was found only in the oldest patient and the degeneration of nerve fibres generally observed thús is considered not to be caused by ischaemia. Histopathology in epi and perineurial vessels was definitely less pronounced than in endoneurial vessels.

Author's summary


The electron microscope allows the anal-ysis of elementary lesions of the peripheral nerve; segmentary demyelination, waller-ian degeneration and bulb type image, non-specific images already observed in se-rial histologic sections. Specific images during peripheral neurologic disease are seldom observed, but when present give pre-cisions as to the etiology: during a predo-minating interstitial disease; during polyra-diculonevritis; acute Guillain-Barré syndromes, relapsing and symptomatic polyradi-culonevritis; during familial and hereditary diseases; during toxic and metabolic dis-eases.

Authors' summary


Estudando trinta pacientes portadores de Hanseníase, escolhidos ao acaso e divi-didos em dois grupos de quine cada um, sendo um grupo constituído de pacientes em pleno surto reacional de eritema nodoso ou de eritema polimorro, e outro constituído de quinze pacientes sem reação específica, após biopsia da membrana sinovial do joelho, o exame histológico permite concluir que existe um processo inflamatório de caráter específico. Optamos pela designação de sinovite hansênica, uma, vez que indica a especificidade e obedece às normas atuais da nomenclatura.

Conclusões do autor


One hundred and twenty seven patients died in Komoyo-en Leprosarium between 1962, January, and 1971, June. Autopsy was done on 110 cases. The average age was 62.5 years old. Malignant neoplasms (33 cases) were more frequent than cerebrovascular diseases (hemorrhage: 9 cases, softening: 3, microscopic hemorrhage: 11). The major direct cause of death was bron-chopneumonia. Investigation of the death certificates in Seisho-en Leprosarium for the years 1967-1976 also revealed that cerebrovascular diseases were not the major cause of death. These results are different from informations of the cause of death in Japan published by the Ministry of Health and Welfare. This discrepancy probably comes from inaccurate description of the death certificates and low autopsy rate in this country.

From authors' abstract

Hanseniasis abstracts


The phenotype frequencies of the serum protein polymorphisms Hp, Gc, Tf, Gm and Inv were determined on a sample of 2500 South African Negroes with leprosy. These results were compared with data derived from 918-977 (depending on the polymorphism tested) healthy Negro controls of similar geographical and ethnic origin, in order to determine whether or not any association existed between specific phenotypes and the occurrence of leprosy. The data derived from the present study were also compared with those of similar comparative analyses on African and non-African populations. Because of the contradictory results between samples with regard to the polymorphisms Hp, Ge and Inv, an association of any of these phenotypes with leprosy appears to be highly improbable. With regard to the polymorphisms Tf and Gm, however, such associations cannot be ruled out. The questions arising from the results are discussed.

Authors' summary


321 adult male lepromatous leprosy patients were studied for relationship between haematological findings, severity of disease and duration of treatment. Significant changes were noticed in relation to haemoglobin concentration, serum vitamin B12 and serum folate levels, serum albumin and globulin. No significant changes were observed in serum iron levels in relation to dis-ease and treatment status. With rising bacterial load, there was a trend towards lower haemoglobin concentration, higher vitamin B12 level and lowered serum folate levels. Serum albumin showed a significant decline, while serum globulin showed a significant rise. The findings are discussed in relation to replacement of bone marrow by lepromatous tissue as well as possible interference in the metabolism of haematinics by M. leprae. The exact mechanism of neurological deficit in leprosy in relation to deficiency of vitamin B12 and folic acid need to be further elucidated.

Authors' abstract


Twenty-four untreated patients of proved tuberculous leprosy and five healthy con-trols were investigated for the involvement of bone-marrow. The cytology was essentially normal and non acid-fast bacilli was seen in the bone-marrow smears.


We infer that the cough response is impaired in leprosy patients because of involvement of the afferent vagal fibres supplying the irritant receptors. The involvement must be diffuse throughout the respiratory tract because ultrasonically nebulised aerosols do reach the peripheral parts of the lung. We are now investigating other vagal nerve functions in this disease.

From the letter

Hanseníase: resumos/Hanseniasis abstracts


Infection with M. leprae affecting the periosteum, cortex and medulla of bone tissue, as well as involvement of joint synovium and articular cartilage are the source of various patterns of development of bone absorption in HD.

Author's summary


Sensory testing (ST) as a parameter in assessing nerve damage and as a guide in antireaction treatment is discussed in comparison with established methods like voluntary muscle testing (VMT) and motor nerve conduction velocity (MCV). Sensory testing is shown to be a valuable addition to the existing tests and may even be used as a single parameter. Authors' summary


Fifty cases of leprosy were studied for clinico-biochemical and histological features pertaining to hepato-biliary system involvement. Therapeutic efficacy of an indigenous drug Liv 52 was also studied for its hepatic restorative and protective effects in leprosy hepatitis. Specific granulomatous lesions suggestive of lepromatous hepatitis was mainly seen in lepromatous leprosy (40%). Granulomata in liver were seen in all types of leprosy (70%). Some of the hepatic lesions progressed to stellate fibrosis and early cirrhotic changes (40%). Functional derangement was the main feature in lepromatous cases irrespective of the extent and duration of the disease. Uniform elevation of normal level of total serum proteins was mainly due to increase in serum globulin with reversal of A:G ratio, indicating deranged hepatocyte function and hyperplasia of reticulo-endothelial cells. Hyperbilirubinemia (highest level of serum bilirubin = 5.6 mg%) was chiefly seen in lepromatous leprosy. A study to evaluate the efficacy of treatment of lepromatous hepatitis with an indigenous drug "Liv 52" was also undertaken in these 50 cases — 20 cases served as control and 30 cases received Liv. 52 along with the antileprosy drug. The clini-
present in each of the three major categories of leprosy, tuberculoid, borderline, and lepromatous. Values were particularly high in patients with severe reversal reactions or Lucio's phenomenon. Prolonged sulphone therapy was associated with a fall in serum lysozyme values. With an immunoperoxidase method to localize lysozyme in leprous tissues, two distinct staining patterns were found, granular and saccular. The granular pattern of lysozymal staining was found in epithelioid cells and in giant cells, and the intensity of staining showed a positive correlation with serum lysozyme levels. Conversely, a saccular pattern of lysouymal staining was found in lepromatous histioctyes, but the intensity staining was unrelated to serum lysozyme levels, the saccular struc-tures contained dense aggregates of Myco-
bacterium leagae. These two patterns of staining probably represent different func-
tional responses of monocyte-derived gra-

Authors' abstract

ROSTANT, M. Dégénérescence épithélioma-
teuse des places, ulcères et maux perfo-

Sans vouloir entrer dans des considé-
rations éto-pathogéniques, il est bon de rappeler que les troubles trophiques du lé-
preux sont dus à une ischémie consecutive à des facteurs vasculo-nerveux, favorisés par des phénomènes traumatiques ou infec-
tieux. Mais nous savons qu'il existe aussi, chez le lépreux, un déficit immunitaire, no-
tamment des cellules thymo-dépendantes, déficit qu'on retrouve d'ailleurs en cancéro-
logie. Dès lors, on peut se demander si le lépreux, dépourvu du facteur de Rotberg, c'est-à-dire de moyens de défense naturelle, n'offrirait pas un terrain favorable aux transformations épithéliomateuses. En effet, jusqu'ici, nous réserions le laite-
ment par les immunostimulants auxseux malades lépreux présentant des états de résistance à la thérapeutique spécifique anti-
Hansénienne. Ainsi, les cas que nous publions, n'avaient jamais reçu de médication immuno-stimulante.

Commentaires de l'auteur

Six cases of epitheliomatous degenera-
tion, among which five spino-cellulars and one baso-cellular, happened among leprosy patients showing sores, ulcerations and planter ulcerations, are quoted in this study. Here, the authors underline the favorable part of the defects of cellular immunity for the leprous pathogenesis, and the need of using histological exams systematically when noticing any continued delay of cicatrisation. An immuno-stimulating medication should be used for any leprosy patient showing obstinate trophical troubles.

Author's summary

SEBILLE, A. Respective importance of dif-

Motor and sensory nerve conduction studies were performed in the distal part of the ulnar, median and radial nerves of 12 tuberculoid and 12 lepromatous leprosy patients, compared with 15 normal subjects. Slowing of sensory conduction velocity (SCV) was shown in all nerves with no difference between tuberculoid and lepro-
matous patients. The radial SCV slowing is correlated (P < 0.001) with the clinical findings. Impairment of motor distal latencies was observed only in tuberculoid pa-

tients. It is concluded that the radial SCV is the most reliable conduction test and is proposed as an early diagnostic test for leprosy.

Authors' summary


A case of amyloidosis secondary to le-
promatous leprosy has been discussed. He had proteinuria, Congo red retention 64 per cent (first hour), hyperglobulinaemia, and renal biopsy revealed amyloid deposits. Factors responsible for amyloidosis are highlighted.

Authors' summary

SINHA, S.N.; GUPTA, S.C.; BISHT, D.

Serum calcium and magnesium in dif-

Serum calcium and magnesium were studied in 200 leprosy patients and 25 ap-
parently healthy individuals. Serum calcium was found to be significantly decreased in all types of leprosy except tuberculoid. The
decrease in serum magnesium was highly significant in tuberculoid, lepromatous and borderline lepromatous cases.

Authors’ abstract


Fifty patients with lepromatous leprosy were studied. Involvement of liver was observed in 90 per cent of the cases. Fatty degeneration was seen in two cases only. Amyloid deposit was not seen in any of them.

Authors’ summary


Sequential biochemical investigations were conducted in cases of lepromatous leprosy in the reactive as well as subsided phases. Low levels of blood sugar and serum cholesterol were indicated in the reactive phase of lepromatous leprosy. Significant increase in thymol turbidity and decrease in A/G ratio were noted in most of the cases of lepromatous leprosy. Enhancement of serum levels of transaminases was observed in the reactive phase of lepromatous leprosy. Serum protein electrophoresis indicated increases in a globulin and r-globulin and decrease in albumin in the reactive as well as subsided phases. The results are discussed in this paper.

Drs. abstract


An E.M. study was carried out to investigate whether Mycobacterium leprae occur intracellularly in epidermal melanocytes. As this could not be confirmed, the selective killing of melanocytes by cytotoxic lymphocytes could not explain the hypopigmentation in types of leprosy with a relative good immune response. There were indications that these hypopigmented lesions resulted from a disturbed transfer of melanosomes from melanocytes to keratinocytes. Further research is in progress

Author’s abstract


Mycobacterium lepraemurium cells were found to multiply in normal mouse peritoneal- and bone marrow-derived macrophages in vitro. Whereas activated peritoneal-derived macrophages demonstrated marked bacteriostasis for M. lepraemurium, significant bactericidal activity was exhibited by activated bone marrow-derived macrophages. However, only a small proportion of the bacteria were killed by activated bone marrow-derived macrophages with subsequent and enhanced bacterial growth. It is suggested that a rapid turnover of monocytes in active lesions is required to control mycobacterial infections in vivo. These results would suggest that careful consideration be given to the choice of the host cell in studies involving obligate intracellular parasites.

Authors’ abstract


The ICRC bacilli are acid-fast bacilli cultivated from M. leprae isolates of lepromatous tissue. The ICRC bacilli from C-44 in the conditioned medium were subjected to foot-pad test, in both normal and T/900r mice. The bacilli exhibit a limited multiplication in normal mice while a continuous growth in T/900r mice. The maximum yield for normal and T/900r mice, was 10^7 and 10^9 foot-pad, respectively. The infiltration of voluntary muscle tissue as the main localization site was common for both normal and T/900r mice with evidence
of dissemination in the latter. The spread of APB to sciatic nerve, induction of liver granuloma and the foot-drop was observed only in T/900r mice. These experiments shown that the growth of ICRC bacilli in mouse foot-pad is very similar to that of M. leprae confirming a test for identification.

Author's abstract


After a brief survey of the literature on the use of penicillin as a therapeutic agent in leprosy, the influence of this drug on the experimental, M. leprae infection of mice is investigated. Statistically significant reduction of M. leprae is observed in penicillin treated mice. The infection develops normally again after stopping of treatment. This is in accordance with a bacteriostatic effect of penicillin.

Authors' summary


So far we have all been believing and saying that a patient of leprosy is the only source of infection and that there is no animal reservoir. However, the present discussion going on in lay press on the presence of leprosy or leprosy-like disease in feral armadillos is likely to shake the belief of an increasing number of the public. The matter, therefore, urgently needs an independent investigation. Moreover, the doubt may not remain confined to armadillos, but may be extended to some other rodents which may be found harbouring some acid-fast bacilli. Such a view if not confirmed by experimental work is likely to cause an alarm in the public about the possibility of transmission of leprosy from armadillos to the human beings, although this looks improbable. However, public alarm and scare is not always based on proved scientific facts. The flesh of armadillo is popularly eaten and relished in the Americas; but it is understood that some alarm has already been caused and people are now getting scared of eating armadillo flesh. The undersigned, therefore, repeats his plea that the matter should be taken up for independent investigation at a high level by experienced workers so far unconnected with the work on the subject, and that all aspects of the matter should be investigated including the possible sources of infection in the armadillos in which leprosy or leprosy-like disease has been reported in feral armadillos.

From the editorial


At varying periods of time following the successful establishment of systemic infections with Mycobacterium leprae or M. lepraemurium in the mouse and the nine-banded armadillo eyes were examined by light microscopy. Inoculation of bacilli was by the intravenous or intraperitoneal route or directly into the hind footpads; eyes were not directly inoculated in this study. During periods of up to 3 years under laboratory conditions no animal showed evidence of impaired vision or blindness, and the external appearance of both eyes was normal. The ocular histopathology and the sites of accumulation of bacilli are described. In immunologically normal mice infected with M. lepraemurium bacilli were much commoner in extraorbital tissues, but they were, nevertheless, found in various tissues within the orbit, including the ciliary body and sclera. In immunologically normal mice (and one rat) injected with M. leprae...
of human origin no bacilli were found in the eye, but in mice immunologically depressed by thymectomy and total body irradiation considerable numbers of bacilli were present in the iris and ciliary body and also in the timbal cornea. In the armadillo bacilli were found in large numbers in virtually all tissues except the lens, retina, optic nerve, and aqueous and vitreous humours, but the uveal tract was heavily involved. Findings are discussed in relation to the great frequency of ocular involvement and the importance of immune-complex disease in patients with lepromatous leprosy, and to factors which may favour the localisation and multiplication of Mycobacterium leprae in the eye.

Authors' summary


1. Between 1 January 1974 and 31 December 1977, Carville has found no leprosy-like mycobacteriosis in 373 armadillos. Two hundred eighty-two of these armadillos were caught in Louisiana, 78 in Florida and 13 in Texas. 2. Seventy-five of the Louisiana armadillos were caught by personnel from the Louisiana Wildlife and Fisheries Commission in the area where Walsh et al said they found 10 per cent "naturally" infected armadillos. 3. Two hundred and seven of Carville's armadillos came from the most human-leprosy prevalent part of Louisiana. 4. Alleged claim of man to armadillo transmission of leprosy as an explanation for existence of leprous armadillos in nature also is at odds with South American findings and conditions 5. Independent verifi-
ing injection of 100 µg of I-ML into the left hind footpads of mice, a state of cell-mediated immunity (CMI) was engendered to antigens of *M. leprae*. The evidence for CMI was as follows: (i) development of delayed-type hypersensitivity to both human tuberculin purified protein derivative and soluble *M. leprae* antigens; (ii) T-lymphocyte-dependent macrophage activation at the inoculation site; (iii) specific systemic resistance to the cross-reactive species *M. tuberculosis*; and (iv) immunopotentiation of the delayed-type hypersensitivity response to an unrelated antigen. The CMI induced by I-ML in aqueous suspension was greater than that obtained with the same antigen in water-in-oil emulsion, even though the latter generated a more severe reaction at the site of immunization. I-ML also induced a stronger CMI response than the corresponding dose of heat-killed BCG.

Authors' abstract


Following subcutaneous inoculation of irradiated *Mycobacterium leprae* (I-ML) into the left hind footpad of mice, there was increased resistance to *Listeria monocytogenes*, indicative of macrophage activation, at the immunization site. In spite of the high level of localized macrophage activation which was proportioned to the immunizing dose of I-ML, no such activity could be demonstrated systemically in these mice, as evidenced by the absence of increased resistance to an intravenous challenge with *L. monocytogenes*. Under these conditions, I-ML-immunized mice were nonetheless resistant to intravenous infection with either *M. tuberculosis* or *M. bovis* BCG, and this immunity was transferred to normal recipients using spleen or lymph node cells. Neonatal thymectomy completely abolished the development of antimycobacterial immunity after vaccination with I-ML, but immunity was restored by an intraperitoneal infusion of syngeneic thymocytes. Systemic nonspecific resistance could be generated in I-HL-immunized mice by an intravenous injection of disrupted I-ML. This study reveals that, after subcutaneous vaccination with I-ML, there is local accumulation of activated macrophages at the inoculation site and a widespread distribution of lymphocytes which are sensitized to mycobacterial antigens. Nonspecific resistance is mediated by the former cells and specific antimycobacterial immunity by the latter.

Authors' abstract


The relationship between the level of delayed-type hypersensitivity (DTH) and the progression of *Mycobacterium leprae* infection was examined after inoculation of mice with 108 *M. leprae* in the left hind footpad. The expression of DTH developed over the first 4 weeks of infection, remained high up to week 8, and then dropped to a low level at which it remained for 12 more weeks. The development of DTH was concordant with an initial swelling of the inoculated foot, the appearance of a mononuclear infiltrate at this site, and a prevention of any increase in the number of mycobacteria in this foot and in other tissues studied. A decay of DTH reactivity was associated with a progressive increase in the number of *M. leprae* initially at the original site of inoculation and subsequently in all other tissues. Although the expression of DTH was lost, adoptive immunization experiments showed that a population of sensitized lymphocytes persisted within the host. Further experimentation offered evidence to suggest that the level of systemic antigen may be in part responsible for the loss of DTH reactivity.

Authors' abstract


Intact organs obtained from armadillos experimentally infected with *Mycobacterium leprae* were kept frozen at 80°C. After approximately ten months of storage, suspensions of *M. leprae* were prepared from these tissues. When inoculated into foot pads of mice, the organisms showed multiplication characteristic of the leprosy bacilli. The results demonstrate that a proportion of *M. leprae* occurring in infected organs are able to survive prolonged exposure to ultracold temperatures.

Authors' abstract


Viable suspensions of BCG, an attenuated strain of Mycobacterium bovis, have been previously shown to immunize mice against infections with M. leprae. Usually, the mice have been vaccinated about 1 month before challenge. Experiments have now been carried out with single intradermal injections of BCG given before or after the M. leprae challenge. Approximately equal immunizing effect was seen in one experiment when the BCG was given at —168, —119, —70, and —28 days relative to challenge. Approximately equal protection was observed in another experiment when the vaccine was given at —28, +28, and +56 days. In the latter experiment, however, vaccine given at +91 days appeared to be somewhat less effective. Enlargement of the lymph nodes regional to the intradermal vaccines was measured and found generally to parallel the vaccine protection provided by M. leprae and by BCG.

Authors’ abstract


Authors’ abstract

CLÍNICA, DIAGNÓSTICO


An ulnas biopsy was practiced to a patient to confirm the diagnosis of leprosy, getting as result an iatrogenic claw hand. As this biopsy has always been dangerous, the authors believe that at the present era of
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preventive medicine and prevention of incapacities, ulnar biopsy should not be practiced anymore.

From authors' summary


The discovery of Mycobacterium leprae within an otherwise normal cellular nevus was not expected, but its occurrence seems reasonable due to the well-known affinity that the organism has for neural crest cells, particularly Schwann's cells. As previously stated, a biopsy should have been taken from normal skin at the time of the removal of the nevus, but the patient was unavailable. It is still unlikely that this finding was just a coincidence since, with the exception of lepromatous leprosy, organisms are not usually found in uninvolved skin. Although this represents only a single case, it is hoped that physicians who see many patients with leprosy will consider examining nevi when organisms may be difficult to find in skin lesions, which is frequently the case in indeterminant or tuberculoid varieties. Such a procedure is considerably less traumatic than nerve biopsies and possibly may prove to be just as useful.

From the letter


Three patients from Paraguay with headache, fever, arthralgias, muscle-pain, splenomegaly and enlarged lymph-nodes were seen. Two of the three patients have also vomiting, diarrhea, colic-pain and abdominal pain. In one of the latter there was also hepatic dysfunction signs, subicteric stain of the skin and choluria. The first case showed a toxic erythema, the second erythema nodosum and the third one had a diagnosis of rheumatic fever. The lymph-node biopsy showed in the three patients a hansenian lymphnode inflammation.

Authors' summary


A critical review of the up-to-date classification of leprosy is made. At the same time the main aspects of a classification directed to those in charge of the control of the disease is given.

Author's summary


Um paciente procedente da Amazônia, Brasil, seringueiro, portador de uma forma branqueada de hanseníase, tratado com sulfitos, tendo como sequelas lesões distróficas das extremidades e man-chas hipocromicas, com perturbações da sensibilidade, apresentou no hipocôndrio esquerdo uma lesão verrucosa extensa, com evolução de mais de 10 anos, rebelde aos tratamentos feitos. Foram feitas biópsias para esclarecimento histopatológico da doença, tendo-se concluído tratar-se de dermatite verrucosa cromomicótica, com presença dos fungos bem caracterizados pelas colorações de rotina, e histoquímicas (Phialophora verrucosa).

Do resumo dos autores

A 32 years old half-breed male coming from Amazonia, Brazil, had been treated with sulfone and was showing sequels including dystrophic lesion of the extremities and hypocrmia with anesthesia. On examination he showed an extensive verrucous lesion on the left hypochondrial region which had lasted 10 years and was resistant to various treatments. A biopsy of the verrucous lesion showed the picture of verrucous dermatitis with fungi evidenced by common and histochemical staining techniques (Phialophora verrucosa).

From authors' summary


The historical review in regard to the classification of leprosy is done. The Indeterminate group is analyzed giving support to its inclusion into the International Classification of Leprosy.

Author’s summary


The authors report on two observations of inflammatory arthrosynovitis occurring in the course of "leprous reaction". One involved a case of nervous leprosy, in which an intradermo-reaction of Lepromin was followed by a monoarthritis of the knee; the other a case of lepromatous leprosy, in which, a few months after an administration of Disulone, polyarticular damage occurred in the course of an arthritic erythema. Various cases noted from the literature are analyzed. The immunization disorders observed in the course of the leprous reaction provide the most satisfactory explanation. Rifampicin, successfully used in one of the cases reported, provides a complement to the therapeutic means against leprous reaction, in which corticoids, Thalidomide and Lamprene have all proved to be truly effective.

Authors’ summary


I have found 8 cases of vitiligo among 114 lepromatous patients, an incidence of 7%, but no cases of vitiligo among a larger number of non-lepromatous patients, and I would be interested to know if this association has been noted elsewhere or if it has been reported in the literature. This observation, when fully investigated by my successor at the Hospital for Tropical Diseases, may lend support to the hypothesis that vitiligo is an auto-immune disorder, having regard to the wide variety of circulating auto-antibodies which have been described in lepromatous leprosy, such as antinuclear, antithyroid and antisperm antibodies, and rheumatoid factor.

From the letter.


Slit smears from 16 LL and 4 BL patients were taken from scalp, exile, inguinal regions and apparently involved skin patch. The bacilli were found in 100%LL and 57%BL patients at all sites. Scalp showed AFB in all LL and 3 out of 4 BL cases. No lesions were seen on the scalp. Bacterial morphology showed no uniform pattern. Contrary to belief, no immune zones were found on the skin as judged by results of bacteriological examination. Our studies do not support the view that the
leprosy bacillus has a predilection for sites with relatively low temperature as far as human leprosy is concerned.

Authors’ abstract


We may reasonably conclude therefore that the greater auricular nerve is often detectable in normal individuals from an endemic area and that its usefulness in the diagnosis of leprosy is thereby diminished.


A case of high resistance tuberculoid inoculation leprosy occurring after 5 months at the site of road side injury in a 30 years old male is reported. It is the first case report of inoculation leprosy occurring as a result of road side abrasion wound. This case confirms that tuberculoid leprosy can occur by inoculation and without prolong-ed skin to skin contact.

Authors’ summary

The existence of diffuse, nonnodular lepromatous leprosy raises two reciprocal questions. Why do no nodular lesions form? What is the mechanism of nodule formation? That PPDL represents early disease is not a satisfactory explanation because patients with PPDL often manifest signs indicating extensive and far advanced illness, such as splenomegaly, perforations of the nasal septum, and neurological deficits. Also, the presence of notably high serum levels of lysozyme and angiotensinconverting enzyme in patients with Lucia’s phenomenon is consistent with the idea that these patients have particularly extensive histiocyte infiltrations. Current views of granuloma formation include the accumulation and organization of monocyte-derived cells as modulated by lymphokines controlled by antigen-specific. T-lymphocytes. Current views of the immunology of leprosy include scant or absent cell-mediated immune responses toward antigens of *Mycobacterium leprae* in lepromatous patients. Perhaps the failure of nodule formation in PPDL could be attributed to the absence of any specific cell-mediated immune responses. Conversely, nodule formation then becomes interpretable as an expression of a specific cell-mediated immune response, however feeble and without evident benefit to the host. These speculative ideas are consistent with the observations of Leiker, who found a greater degree of lepromin
responsivity in patients with nodular lepromatous leprosy than in those with diffuse lepromatous leprosy. From authors’ comment


A rare association of Waardenburg’s syndrome and tuberculosis leprosy in a 13 year male patient is described. This is an unrecorded feature in the literature. These two disorders are quite unrelated entities and their occurrence in the same patient is a casual one. All the classical features of Waardenburg’s syndrome except deafness were present and the disease manifested as an isolated case in the family. The pertinent literature is briefly reviewed.

Authors’ summary


Assim, todas as que relacionam esta forma de leishmaniose com os qualificativos: “lepromatóide”, “lepromas leishmaníicos”, “simulando lepra”, “pseudo-lepromatosa”, “lepréide” ou “lepromatosa”. Ainda que realmente justificáveis pelo fato das lesões apresentarem a mesma conotação que hanseníase virchowiana, somos forçados a relembrar que, em todo o mundo, um grande esforço no sentido de proscrever a palavra lepra e derivados, pelas sérias implicações sociais de todos conhecidas. Assim sendo, nada justifica que se adicione It leishmaniose um verbo interdit. Para obviar os inconvenientes acima referidos, sem desvinculá-lo entretanto de sua semelhança do ponto de vista semiótico com a hanseníase, e à ênfase que tem sido dada por quase todos os autores, insistimos na nova designação: Leishmaniose Anérígica Hansenóide, que propusemos desde 1972.

Do trabalho


This is a report of lepromatous cases with acute infiltration reaction (Tajiri) in his clinical course under chemotherapy. They were all males, among whom one case showed localized skin lesions and other two cases had generalized lesions upon admission. Skin biopsies revealed all borderlinelepromatous features (Ridley-Jopling’s classification). These reactions developed one and half to 4 months after the start of treatment, and lasted 9 months to two years intermittently. After this reaction the Mitsuda reaction test gave the same result as before in one case, but other two cases became weakly or moderately positive. Bacterial Clearance Time (Takizawa) was 2.7, 4.3 and 5.9 years, respectively. The nomenclature and the nature of this reaction were discussed, especially with relation to chemotherapy.

Author’s abstract


TERAPÊUTICA


A long term study of the application of the method to assess correlations with clinical results and mouse foot pad tests on a statistical basis will require a further study. But we believe that we have already shown that the use of radioactive metabolites or other rapid tests for metabolism and biosynthesis by living bacilli of *M. leprae*, before contaminating organisms can arise, will be the method of choice for a future test in clinical studies of relapsed lepromatous leprosy cases.

From the discussion


Limited information available on the pathogenetic mechanisms involved in reac- tional states of leprosy makes the task of management difficult. In the recent past a number of new drugs have been introduced. Various known etiopathogenetic factors and the present status of management of reactions in leprosy is briefly reviewed herein.

Authors' summary


Using sonicated suspension of an acid fast bacillus — ICRC bacillus — antigen and serum of the leprosy patients as antibody, it was shown that thalidomide prevents the release of histamine from the interaction. Thalidomide also prevented PCA reaction in rats but failed to influence passive reverse Arthus reaction in rats.

Authors' summary


Presentaré un pequeño resumen (sin pretender que sea completo), de las indica- ciones de la clofazmina en lepra, según la opinión de diferentes autores: 1. Pacientes con lepra lepromatosa en general o en aquellos con exacerbaciones o reacciones leprosas frecuentes, repetidas y muy se- veras; 2. Estados agudos en algunos casos borderline o tuberculoiodes reaccionales, en los cuales la talidomida no es efectiva; 3. Pacientes con cuadro de RL muy severa, sobre todo mujeres que deseen procrear; 4. Pacientes con complicaciones neuríticas muy severas, por to general consecutivas a RL; 5. (Pacientes con corticodependencia, permitiendo su uso, eliminar los esteroides gradualmente; 6. Pacientes con cuadros ref ractarios al tratamiento con sulfonas; sulfonorresistencia; intolerancia o idiosincrasia a las sulfonas.

Del trabajo


Os autores estudaram a atividade tera- pêutica do Levamisole, um modulador quí- mico da imuno resposta celular em 43 pacientes portadores de hansenfase, sendo 39 da forma clínica L(v), 3 da forma di- morfa e 1 da forma tuberculóide reacional. Os resultados foram bastante animadores: todos os pacientes se beneficiaram com o
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uso do medicamento, principalmente os que apresentavam eritema nodoso. Foi observada uma intensa desinfiltração, com regressão dos lepromas, paralelamente a uma redução de bacilos na mucosa nasal e escarificações cutâneas. A tolerância ao Levamisole foi considerada boa, embora usado em associação com outras drogas específicas.

Resumo dos autores


This report is based on data obtained from 64 lepromatous cases. Despite many years of DDS monotherapy, the homogenates from biopsies of these patients revealed 10^4 or more bacteria. From the beginning of combination therapy with synergistic-acting substances (rifampicin + PTH + DDS) the logarithms of the number of bacteria in the homogenates decreased, both during treatment period and during treatment-free observation period (Figs. 3-8). During the whole time biopsies were taken almost monthly. A considerable regression of the bacterial mass or even "negativity" could be observed within a relatively short time. Once started, the process of reduction of bacteria continued also after termination of therapy. To be able to evaluate a medication therapy, free observation periods (for a minimum of 5 years) are indispensable.

Authors' abstract


Dans ce travail, inspiré par l’Institut Pasteur de Cayenne, l’auteur étudie les résultats de l’immuno-stimulation par le B.C.G. intradermique selon la méthode de Ruscher. Les résultats semblent favorables dans 61% des cas caractérisés par des modifications immunologiques ou histologiques. Il semble que les formes BL soient les plus aptes à répondre à un immuno-stimulant. Mais ces derniers sont peut-être faussés par le fait que la plupart des malades ont été traités simultanément par la rifampicine.

M. Géniaux.


The results of the inoculation of M. leprae in the mouse footpad and in the nine banded armadillo and the usefulness of these inoculations in the leprologic field are discussed. And the utility of M. I., and first line drugs in antileprae therapy. The deficient immunological capacity of the lepromatous patient is commented. Also the discovery of the principal immunotherapeutically techniques such as diptheriae toxoid, B. C. G., levamisole and isomers, allogeneic leucocytes, transfer factor, etc., their results and side effects.

Authors' summary


The results of the inoculation of M. leprae in the mouse footpad and in the nine banded armadillo and the usefulness of these inoculations in the leprologic field are discussed. And the utility of M. I., and first line drugs in antileprae therapy. The deficient immunological capacity of the lepromatous patient is commented. Also the discovery of the principal immunotherapeutically techniques such as diptheriae toxoid, B. C. G., levamisole and isomers, allogeneic leucocytes, transfer factor, etc., their results and side effects.

Authors' summary

The benign and acceptable side effects of clofazimine are well recognized amongst leprologists. But in addition it is becoming evident that gastro-intestinal symptoms may be not only very severe, but due to tissue deposition of crystals they can be irreversible and life threatening.

From the summary


Conventional methods for demonstrating dapsone are either insensitive or not practicable for general use in leprosy endemic areas. We have developed an immunoassay that is both simple and sensitive. The urine samples were used to compare ELISA inhibition with two conventional spectrophotometric procedures. Out of ten samples, negative on one or both spectrophotometric procedures, 9 were positive and 1 equivocal on ELISA inhibition testing. Sera from patients taking dapsone, which would be expected to contain 1-3 µg/ml were dapsone positive by ELISIT even when diluted a hundred-fold. The sensitivity of ELISIT and its simplicity may be of practical value in leprosy-endemic countries with limited laboratory services.

From the letter


Leprosy reactions can be broadly classified into two aetiological groups. Type I (Lepra) reaction is the result of changes in cell-mediated immunity and type 2 (ENL) reaction is probably due to formation of immune complexes. Therapy must at all times include effective antibacterial drugs to which specific reaction suppressants should be added. Prednisolone and clofazimine are effective in suppressing both types of reaction and thalidomide only in the treatment of Type 2 reaction.

Author’s conclusion


O nível sangüíneo de dapsone (DDS) foi investigado em 105 hansenianos adultos (80 homens e 25 mulheres) que apresentavam valores extremos de hematócrito. A concentração sangüínea de dapsone 6 horas após a ingestão de 100 mg desse medicamento mostrou-se independente do sexo e de o hematocrito ser alto ou baixo.

Resumo dos autores

The level of dapsone (DDS) in the blood was investigated in 105 adult leprosy patients (80 males and 25 females) exhibiting extreme hematocrit values. The concentration of dapsone in the blood after the ingestion of 100 mg of this drug was independent of sex and of the hematocrit being high or low.

Authors’ summary


Drug sensitivity was tested using liquid medium on three strains isolated from the subcutaneous nodules of L-type patients who have long been administered DDS alone. The results revealed that the first strain was resistant to DDS up to the concentration of 1.0µg/ml suggesting as if it were DDS dependent or enhanced strain, whereas the second strain was completely sensitive to DDS even at the lowest concentration of 0.01 µg/ml suggesting possible inactivation of this drug in the host patient. The third
strain was completely resistant to 0.1 µg/ml, but sensitive to 1.0 µg/ml of DDS, suggesting that the therapeutic effect can not be expected any more, when the strain becomes resistant to 0.1 µg/ml of DDS. All of the three strains were sensitive to RFP at the concentration of 0.01 µg/ml, and the host patients of the former two strains showed rapid improvement of the clinical symptoms after RFP administration. That the second strain was sensitive to INH at the concentration of 0.01 µg/ml suggested the availability of the combined use of INH in the chemotherapy of leprosy.

Authors' summary

The Dapsone/creatinine ratio in random samples of urine was determined in 910 infectious leprosy patients attending the outpatient department of the Acworth Leprosy Hospital, Bombay during the period 20-9-76 to 20-11-1976. It was found that 48.7% of them were not taking regular treatment. The patients who were detected to be irregular in treatment were interviewed when they next attended the clinic to find the reason behind their irregularity. It was noticed that the majority of them (63%) attended the clinic for DDS treatment but could not come regularly for valid reasons, e.g. no time to attend, no money to travel to the clinic and absence from Bombay to go to native village.

Author's abstract


Exacerbation or precipitation of reaction in leprosy due to clofazimine treatment are described in 7 of 24 patients, highlighting its limitations in such cases and hence warranting its judicious use.

Authors' summary

In our leprosy patients the treatment of severe reactional precipitated by skin testing (with antigens from M tuberculosis, M. scrofulaceum, M. xenopeit, M. africanum, N. farcinica, N. otididis) was longer and more difficult than treatment of the other forms of reactional state. Clofazimina alone (300 mg/die) did not control erythema nodosum lepromatum and it was necessary to add thalidomide (400 mg/die for one week) and corticosteroids (dexamethasone: 3 mg/die for 7 days); in the moderately severe reactions we used clofazimina in the usually dose, with a short period of thalidomide at the same time. Finally, once reaction is controlled, the dose of clofazimina can be temporarily reduced to 100 mg/die. but increased again when relapse occurs.

Authors' summary

15 cases of lepromatous patients were treated with sulphones and Clofazimine in a dose of 100 mg. Lamprene, 3 times a week alternatively with 50 mg. Dapsone 3 times a week, in some cases and 3 injections of Promin in others. Because of a bigger clinic and bacteriologic activity and the minimum of secondary effects we believe that this is the ideal treatment for lepromatous patients during the two years of treatment.

Authors' summary

The present clinical study comprises of eleven lepromatous leprosy patients. In all these patients lepra reaction was noticed. These patients were previously taking sulphones. Patients were followed for two years and the results are given.

Authors' summary

Over 100 patients with lepromatous leprosy were treated with rifampicin in a series of pilot, uncontrolled, and controlled trials in 1968-77. The rapid bactericidal effect of rifampicin on Mycobacterium leprae was confirmed. Clinical improvement became apparent sometimes as early as 14 days after the start of treatment. Nevertheless, a few persisting viable M. leprae were detected as long as five years after the start of treatment with rifampicin either by itself or in combination with the bacteriostatic drug thiambutosine. Treatment with rifampicin and dapsone for six months reduced the number of persisting leprosy bacteria more than treatment with dapsone alone.

Although rifampicin proved more effective than dapsone, it is unlikely that used by itself it can significantly shorten the length of treatment in lepromatous leprosy. Therefore initial intensive combined treatment with two or more bactericidal drugs (including rifampicin) warrants further investigation in both untreated leprosy and lepromatous leprosy resistant to dapsone.

Authors' summary and conclusions
CIRURGIA, FISIOTERAPIA, REABILITAÇÃO FÍSICA
SURGERY, PHYSIOTHERAPY, PHYSICAL REHABILITATION

This paper describes a simple method of assessing the constituent features of flexion deformities of the proximal interphalangeal joints in Hansen's disease, and a simple operation to correct the anterior displacement of the lateral band and the associated contractures,

Authors’ summary


LESSA, S. & CARREIRAO, S. Use of an encircling silicone rubber string for the

We describe a modification of Arion’s technique for the correction of lagophthalmos by a circle of silicone rubber string placed subcutaneously near the lid margin. We have operated on 14 cases by this technique with good results observed in 13 after a two-year follow-up.

**Authors’ summary**

**EPIDEMIOLOGIA, PREVENÇÃO**

**EPIDEMIOLOGY, CONTROL**


The incidence rate of leprosy mostly depends on the efficiency of the means of detection, that’s why it’s often referred to, as ”case detection rate”. Proceeding from the new which have come out in Martinique these last ten years a method of efficiency testing for active and passive detection structure is suggested. It is shown that the detection in schools can only diagnose at the utmost 25 % of the potential new cases as it actually concerns the group of less frequently contaminated people. Proceeding from the actual rates of incidence calculated on the proportion : new cases/actually examined children, an estimation of the probable incidence rate may be proposed by making an extrapolation upon the whole population. It is thus shown that the number of new fictive cases being 174 in 1976 and the number of detected cases 52 it is probable that 122 diseased people are about without being diagnosed. The active detection in schools must then, in order to be optimized, select the age group where the number of case is the highest, and, proceeding from these new cases, must strive to reinforce the epidemiological actions in families.

**Authors’ summary**


1 — Desestigmatização da hanseníase. 2 — Desmistificação do diagnóstico. 3 — Integração de fato. 4 — Realização efetiva das práticas de prevenção de incapacidades.


The various epidemiological aspects of 16,534 patients of hanseniasis are considered. From this study the importance of the Indetermined group and the fact that it is more frequent in the younger group are stressed.

**Adapted from the author’s summary**


A la fin de cette enquête, on peut énoncer les conclusions suivantes: — Le premier point important, c’est la participation massive de la population à cette enquête. Le pourcentage moyen de présence dépasse 91%. — En ce qui concerne la lèpre, il Taut noter les excellents résultats obtenus par la campagne de manse contre cette maladie. Même aprés les nombreuses liberations décidées au tours des 6 ou 7 dernières années, on peut encore libérer les deux tiers de l’effectif en compte fin 1975. Cependant, il y a lieu de faire un gros effort de dépistage pour trouver les quelques 6.000
lépreux que l'on peut s'attendre à trouver clans un futur immédiat. L'examen des différentes étapes du programme de lutte montre qu'il serait utile d'améliorer le dépistage, la surveillance du traitement et l'application des critères de guérison. On pourra ainsi avoir une vue plus exacte de la situation et préparer une nouvelle chute du nombre des malades. — En ce qui concerne la tuberculose, il semble bien qu'elle ne constitue pas un problème majeur de santé publique en zone rurale. Le dépistage et le traitement de cette maladie pourraient donc être intégrés dans les activités de lutte contre la lèpre.

Author's conclusion


L'enquête par sondage effectuée en Haute Volta pour évaluer l'efficacité de la campagne de masse contre la lèpre pendant les dix ans écoulés (1966 — 1976) a montré que cette lutte avait été un grand succès: 1 — La tendance à la diminution régulière du nombre des cas de lèpre a été confirmée et même trouvée bien plus importante que ne le montraient les chiffres officiels. La prevalence diminue de 84,98%, passant de 35,01% à 5,26%., 2 — La dynamique de la maladie est moindre forte qu'il y a dix ans. L'incidence est passée de 1,77% à 0,54% c'est à dire a baissé de 69,5%. 3 — Le nombre de malades à libérer des contrôles est de beaucoup plus important que les statistiques officielles le montraient. Il s'agit donc d'une campagne pleine-nécessité réussie. Cependant il reste encore plusieurs dizaines de milliers de lépreux en Haute Volta et ce n'est pas le moment d'arrêter les efforts entrepris il y a une vingtaine d'années.

From the article


I close with a challenge from the lips of him whose martyrdom we remember today: "Leprosy work is not merely medical relief; it is transforming the frustration in life into the joy of dedication, personal ambition into selfless service. If you can transform the life of a patient or change his values of life, you can change the village and country." And so he would challenge us in practical and persuasive terms to care for the individual leprosy sufferer, to abolish discrimination of all kinds, to prevent the spread of leprosy and prevent deformity, and to insist on the importance of non-medical factors in the treatment of leprosy in the individual and its control in the community.

From the article


We describe an approach to the management of household contacts of leprosy patients and the rationale on which it is based. Initially, all household contacts should be interviewed and examined for symptoms and signs consistent with leprosy and appropriate diagnostic measures taken. Contacts of untreated lepromatous and dimorphous (borderline) leprosy patients are at relatively high risk of disease and should be examined annually for at least 5 years. Dapsone prophylaxis has been shown to prevent secondary cases in contacts up to 25 years old and should be used in these and possibly in older persons. Insufficient data exist to support a recommendation for use of BCG at present.


A survey was carried out on 4,500 serving officers and soldiers of the Brigade of Gurkhas in Singapore, Malaya and Hong Kong in 1971 and 1972. The results showed a prevalence of 11.3 cases of leprosy per thousand in this highly selected group. It is suggested that some previous estimates of the prevalence of leprosy in the general population of the Himalayan foothills underestimated the problem.

Authors’ summary


Leprosy evolves over a long period and after the time of contact it takes long time before pathological changes become evident. Prevention may be achieved by increasing the level of detection and controlling the risk factors. In this paper, the methods of prevention of leprosy are described. Primary prevention, or prophylaxis is of prime importance and this can be achieved by reducing an individual's susceptibility as well as by reducing his/her exposure to susceptible individuals. The former needs general health promotion, immunoprophylaxis and ohemoprophylaxis. The latter is achieved by isolation and early detection of cases. A critical review of merits and demerits of these measures is presented. Secondary prevention is through early detection of cases and their prompt treatment. Tertiary prevention is the prevention of deformities, and rehabilitation of those who are already disabled.

Authors’ summary


The conclusions that can be drawn from the main (Project I) and subsidiary study (Project II) are: 1. The effect of DDS chemoprophylaxis has been temporary and of limited value. 2. The greatest benefit is in the group of children without known direct contacts when protection after four years prophylaxis may reach 88.4%, declining in the subsequent four years of observation to 62.4%. The next to benefit are the children of lepromatous parents, with 46.8% protection at cessation of prophylaxis and diminishing to 18.9%. Slight to negligible protection appears to be afforded to the children of non-lepromatous families. 3. The investigator considers that although most children start with tuberculoid or indeterminate lesions, as they grow older self healing is relatively greater among females than males. 4. That the main action of DDS chemoprophylaxis is that of reducing the incidence of mild cases and those that have an inherent trend towards self-healing i.e which in the natural course affects chiefly the female sex, and temporarily also reduces the severity of other cases. 5. Chemoprophylaxis may be justified in contact children under the age of five years (considered the most vulnerable period for both sexes), for a period of not more than six years. A note of caution must be sounded on the toxic effects of DDS and prophylaxis should be accompanied by a suitable iron preparation. Where expert examination is available twice yearly to this age group, chemoprophylaxis can be considered unnecessary.

Author's conclusions


A clinical and epidemiological study of leprosy revealed 232 cases in Jodhpur (Rajasthan); a non-endemic area. Males were three times more affected than females. Lepromatous leprosy was the most common type (70.70%). Maximum number of cases were observed in the age group 20-49 years. The probable causes for an increase in incidence are discussed.

Authors' abstract


A total of 907 cases of leprosy from two sources, records from Baba-Baghi Leprosarium (709 cases) and Ahar case finding survey (198 cases), have been studied. The main characteristics of the cases are: a) about 50% of all cases are lepromatous leprosy; b) the leprosarium cases are about 2.5 years younger; c) about 70% of all cases are male; and d) the incidence of leprosy shows a steady increase up to 25-30 years of age and levels off thereafter. These and other findings are discussed.

Authors' summary


The futility of compulsory sterilization of leprosy patients as a method of controlling leprosy is pointed out. However leprosy patients do need family planning advice and methods as do the general population. In addition infectious leprosy patients need to postpone marriage or pregnancy till they become non-infectious. The possible way in which family planning may influence sexually transmitted diseases and skin disorders are briefly indicated.

Author’s summary


The new program of prophylaxis of hanseniasis in Brazil (Phase III) is based on the social and psychological aspects of the disease.

Adapted from the summary


The authors have reported several times a number of facts which show the “State” or “Province” of Salta, in Argentina, is an endemic area of leprosy. In the last five years the number of patients has been four times superior to those seen in previous 5-years period. A study is made on the basis of the area where the population is more dense. The results show that although there is not a program for the control of the disease, the incidence at the end of this decade would be more than 0,5%.

Authors’ summary

SEHGAL, V.N.; REGE, V.L.; MASCA-RENHAS, M.F.; REYS, M. The prevalence and pattern of leprosy it a school survey. Int. J. Lepr., 45(4): 360-363, 1977. The prevalence of leprosy in a school survey conducted in Panaji, India was found to be 5.3 per 1,000 with males predominating. The majority of patients had a single lesion on exposed parts of the body showing the clinical characteristics of tuberculoid leprosy. However, clinical features of indeterminate leprosy were seen in two patients and borderline tuberculoid in a single case. On the other hand, histopathologically, the majority of the patients were classified as having borderline tuberculoid or indeterminate leprosy. A disparity between the clinical and histopathologic diagnosis was evident. This observation emphasizes the importance of studying both the clinical and histopathologic features in deciding the precise status of a patient in the leprosy spectrum.

Authors’ summary


The endemic aspects of leprosy in Uruguay are analyzed. The Indetermined cases are very few. The difficulties concern

ing the endemic control in Uruguay are pointed out.

Authors’ summary


The objective of training activities in leprosy is the formation of sufficient and qualified manpower necessary to control the disease. A clear definition of the leprosy problem in each country or area is an essential requirement for the planning of training activities. The existing and planned health infrastructure is another milestone on which specific manpower needs for leprosy and other disease control must be based. Hasty extension and creation of specialized services, which in leprosy are of a longterm nature, 20 years or more, often create more problems than they are intended to solve. Close coordination and integral development of leprosy control with other health activities in most instances will be the soundest approach towards meeting the training needs for leprosy control. Some exceptions for high leprosy endemic countries, or areas inside such countries, must be made and specialized training will be needed for such conditions.

From author's summary

PSICOCOLOGIA, EDUCAÇAO, REABILITACAO SOCIAL
PSYCHOLOGY, EDUCATION, SOCIAL REHABILITATION


The psycho-linguistic search has showed that up to this time a new word for the designation of leprosy is not indicated. The sin is not in the word but in the painful implication of the meaning of that word.

Authors’ summary


**GENERALIDADES, HISTÓRIA**


"Enfermedades de la piel" es el título del capítulo XIII del Levítico en las relecturas de las ediciones que se han publicado en la mayoría de los idiomas europeos de la llamada Nueva Biblia, que nos gusta soñar que comprobar que la Biblia anteriormente conocida se ha transformado totalmente en cuanto a Biblia se refiere. En las antiguas ediciones, el título del capítulo XIII era "Leyes de policía sobre el discernimiento de la lepra, el cual pertenece a los sacerdotes".

Este capítulo XIII constaba de 59 párrafos, en los que se reiteraban las palabras "lepra" y "leproso", y en cambio en la nueva Biblia ocupa la mitad de espacio, sólo 43 párrafos, sin mencionar ninguna vez las palabras aludidas. Además de lo del Levítico, han sido modificados en el mismo sentido el libro del Exodo, el de los Números, las Crónicas, las Paralipémenos y el libro de Job, y también del Nuevo Testamento desaparecieron las palabras citadas y todas las medidas discriminatorias con los enfermos. Por supuesto, que la edición española está editada por Ediciones de Cristiandad, y las ediciones francesas, italianas e inglesas, lo mismo que la española, están autorizadas con el Nihil obstat.


Lo más importante es que durante siglos, hasta comienzos del siglo XX, la palabra "LEPRA" se utilizó como un cajón de sastre, al que iban a parar todas las enfermedades repugnantes que nadie sabía diagnosticar. Con más propiedad, como un monstruo depósito de basura, al que arrojaban todas las irrupciones, todas las mutilaciones, que no sabían curar, junto con toda las dermatosis de aspecto repugnante que los curanderos de todos los tiempos y lugares no lograban aliviar en dos plazos de siete días. Aunque nosotros nos vamos a referir a España, esto era igual en toda Europa y en los demás continentes y mientras esto ocurra es imposible precisar ninguna evolución, en ningún país, por ser necesario empezar discriminando exclusivamente sobre la enfermedad producida por el *Micobacterium leprae*.


*Phase I: Compulsory isolation. Phase II: treatment of out-patients in integrated services. Phase III: The priority of psycho-social problems. Other conventional and nonconventional measures. Phase III approved in the preliminary tests. A frank talk between endemic countries*


GATTI, J.C. Recientes avances y estudios actuales en la investigación en lepra. 


Some historical data about leprosy therapy before Sulfones at the Province of Puerto Plata are reviewed; a brief biography of Margarita Mears, precursor of leprosy control in the Dominican Republic, is included.

Author’s summary


The paper begins with an account of the present world distribution of leprosy and is followed by a description of the clinical features of the various types of the disease. The differing views regarding the mode of spread are discussed, and, on the subject of the management of leprosy, special emphasis is placed on the shortcomings of the antileprosy drugs which are at present available, on the question of bacterial resistance to dapsone, and on the problem of absenteeism and of defaulting on treatment. The outlook for the production of an effective vaccine is discussed, and the paper ends with a tribute to the all-important role played by medical auxiliaries in countries where leprosy is endemic.

Author’s summary


LAGARRIGUE, J. La lèpre. Aspects épidémiologique, immunologique, clinique et thérapeutique en Guyane française.