

**IV BRAZILIAN HANSEN'S  
DISEASE CONGRESS**

**Porto Alegre, october, 29th to november,  
1st 1982**

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## Immunotherapy and Immunoprophylaxis in Hanseniaeis

— Jacinto Convit

### Immunoprophylaxis

The development of an effective vaccine is a fundamental factor in the control of infectious diseases. Concerning the Hansen's Disease, this is still more important due to the increasing number of *M. leprae* varieties resistant to drugs which make the disease control through chemotherapy very difficult.

It was determined that the general population is resistant to catch this disease in a high percentage (around 80%). Within the susceptible group, there are also variations, determining the appearance of different clinical forms of the disease which can vary from intense bacillary cases, which would be the infection sources, to the so-called paucibacillary or non-contagious cases where there is a small number of bacilli.

The bacillary leprosy is considered to represent a specific immunologic defect of the host toward the *M. leprae* which lasts during the whole life of the patient, even when he becomes negative after a prolonged chemotherapy. Moreover, this defect can be also observed in healthy persons, which can be evidenced through the MITSUDA test although being persistently negative to it.

However, an important aspect in relation to this is that these persons who do not react to the *M. leprae* present normal reactions to other mycobacteria as demonstrated after BCG injection.

For this reason, vaccination efforts, in the immunoprophylactic aspect, have been oriented towards the susceptible population, that is, to those persons who are not capable of reacting normally to the *M. leprae*.

In order to identify these persons a soluble antigen originated from the *M. leprae* has been developed. This antigen can help in the discrimination of susceptible and non-susceptible population of an endemic area, thus vaccinating part of the general population, which would be a great help even in the operational aspect. Our experiences with soluble antigen are carried out with the contacts of Hansen's disease patients who live in endemic areas.

Since last year, experiences of this kind have been initiated in two states of Venezuela, Táchira and Apure which present a high endemic level of Hansen's Disease. These pilot experiences covered initial groups of population of about 3,000 people in each state. The results of these experiences have shown that the mixture of *M. leprae* and BCG either produces or stimulates late hypersensitivity to the soluble antigen in 98% of the people initially negative.

### Immunotherapy

The experience accumulated up to the present, which will be published soon, covers a group of more than 600 people presenting the above mentioned characteristics.

The Mitsuda Ø contacts presented a complete immunologic alteration 8 weeks after vaccination.

Patients with Indeterminate Mitsuda Ø Hansen's disease (potentially lepromatous) needed more than one vaccination. Up to the present, 43 out of the 45 patients, presented favorable immunologic alterations, the remaining two being under observation.

Concerning the severe forms of the disease (LL and BL), the repeated vaccination from 4 to 6 times, caused favorable clinical and histopathological modifications, presenting an appreciable number of immunologic alterations and an important reduction of the bacterial population.

The secondary effects of the vaccination were very limited. There were few cases of neuritis as well as reacting phenomena, which can be easily controlled by thalidomide and dexametasone. These phenomena can be compared to those observed in patients submitted to chemotherapy.

The clinical, anatomo-pathological, bacteriological and immunologic results observed both in contacts and in low-resistance forms of the disease make us believe that the vaccination therapy will occupy an important position in the treatment of the Hansen's disease.

### The Nude Mouse in Leprosy Research

— Robert C. Hastings, Melvyn J. Morales, and Sumir Chehl

We have recently followed, in some detail,

the pattern of growth of *M. leprae* in athymic, nude mice. In inspecting the data and calculating conventional generation times for *M. leprae*, an inconsistency became apparent. The most reasonable explanation for this inconsistency seemed to be that viable *M. leprae* multiply relatively rapidly and are killed relatively rapidly in vivo. In modeling the infection, we were able to calculate an estimate of the generation time for viable *M. leprae* on the order of 26 hr. which is comparable to slow growing mycobacteria in general. The estimated half-life of a viable bacillus in vivo was calculated to be on the order of 29 hr. The calculations can be extended to predict the Morphological Index at which no net change in the total body of *M. leprae* in a lepromatous leprosy patient is occurring this value is 0.4%. Incubation times for primary polar lepromatous leprosy can be calculated based on the mean Bacteriological Index and the mean Morphological Index of newly admitted polar lepromatous leprosy patients. These values are in reasonable agreement with the conventional incubation times for clinical leprosy of 3-5 years. Estimations can be made of the probable size of the initial effective inoculum of *M. leprae* by setting time to be the conventional incubation periods of 3-5 years. The initial effective total inocula are on the order of  $10^3$ - $10^7$  total bacilli. These calculations can be used to predict Bacteriological Index given the Morphological Index in a polar lepromatous leprosy patient. Calculations can be made as to the probable number of drug resistant mutants of *M. leprae* originally present in the polar lepromatous leprosy patient who relapses on monotherapy with various drugs. These are on the order of one in  $10^5$  organisms initially resistant to streptomycin, one in  $10^7$  initially resistant to rifampin, one in  $10^9$  initially resistant to ethionamide. The calculations suggest that secondary sulfone resistance usually develops during the course of chemotherapy and is not the result of selection of a pre-existing resistant mutant. These speculations, if true, may have implications for the chemotherapy of leprosy and for approaches to the in vitro cultivation of *Mycobacterium leprae*.

## Works

### Sanitary Education in Hansen's Disease

—Tarlé, S.F.; Prevedello Neto, A.; Santos, V.C.; Lovera, M.E.

The authors present a series of 33 slides, showing through drawings and their respective interpretation the Hansen's disease concept, its development and way of contagion.

Afterwards, special cares of sanitary education, pointing to the importance of early diagnosis and the respective treatment, as well as the control of contacts are shown.

They end by showing that Hansen's disease, if appropriately treated, can be cured and the patient can have a normal life either at work or home environment.

### Health Education in Hansen's Disease — The problem of Nomenclature

—Lima, G.R.K.; Virmond, M.C.L.; Galbinski, I.; Ferreira, J.

191 Hansen's disease patients were interviewed in specialized dermatology services and three questions concerning the name of the disease were made:

- 1) What is the name of your disease?
  - 2) How would you prefer your disease to be named?
  - 3) How do you call your disease when you speak about it with other people?
- It was found out that:
- A) The number of patients who answers "leprosy" as being the name of the disease is greater than the number of patients who answers "Hanseniasis".
  - B) Most of the patients prefer their disease to be called "Hanseniasis".
  - C) Just a small number of patients refer to the disease as "leprosy" or "Hanseniasis" when talking to others; most of them use euphemisms.
  - D) Most of the patients have difficulty in pronouncing the word "Hanseniasis".

From these data, it can be concluded that, although "Hanseniasis" is considered to be a

milder term than "leprosy", the difficulty in pronouncing and understanding the word impairs its use when working with health education. On the other hand, Hanseniasis is generally considered to be a synonym for leprosy, so that the patient avoids using both of them indistinctly.

### Sanitary Education In Hansen's Disease

— Mesquita, A.P.

Anti-hansenic campaigns should be aimed only to physicians, other health personnel, patients and contacts.

People in general do not give importance to this kind of campaign, and forget them very fast.

The physician who works with Hansen's disease has also to be a sanitary educator to his patients and respective contacts.

Besides being treated, patients have to be informed about hanseniasis, and be very helpful in the prophylaxis of the disease.

The patient is the most indicated person to discover new cases, to stimulate other patients and contacts to see a physician for treatment and to enlighten doubts and fears about the disease.

### Procreation of Armadillos *Dasyus novemcinctus* in Captivity

— Opromolla, D.V.A.; Arruda, O.S.

Aiming at the procreation of the armadillo *D. novemcinctus* in captivity to be used in research of Hansen's disease, couples have been kept in laboratory for mating. Couples are set according to the relationship experimentally observed and are just kept together if there is no rejection.

10 out of the 16 animals (8 couples) in experience were captured and adapted to captivity and 6 were born in captivity from females captured in pregnancy. One of these couples, T47 (female captured in March, 1978) and T-65 (male captured in January, 1977) had been kept since August 1979. In October 1981, i.e., 42 months after the female had been captured, 4 offsprings were born. The latter however, did not survive and the reasons were

not entirely understood. It could either be due to an attack by the male or to an excessive zeal by the female.

From another couple (T-96 & T-98), both captured in May 1980, and since then kept together, 16 months later (October 1981) 4 offsprings were born. They did not survive probably due to the same reasons mentioned above.

From these facts, we believe it is possible to procreate the *D. novemcinctus* in captivity. This would be of great importance since it would enable the selection of more appropriate lineages, maybe with greater susceptibility to *Mycobacterium leprae*, and yet, it would make possible the development of genetic studies by using the 4 monozygotic twins usually generated in this species.

### Self-Aggressive Hansen's Disease

— Azulay, R.D.

The Author calls self-aggressive Hansen's disease a peculiar picture which occurs in cases of Virchowian or Borderline Hanseniasis and which has the general clinical and immunopathologic characteristics of the systemic diseases.

Among the clinical characteristics he points out: fever, arthralgia, loosing of weight, generalized lymphadenopathy, Erythema nodosum and multiforme-like lesions, vasculitis and nephritis; the humoral presentation is characterized by the following findings: presence of the L.E. cell, high titles of ANF, IgG, IgA and IgM, germinative anticell-antibody, antiskin, antilipid, rheumatoid factor, reactive protein C, cryoglobulin, and others. Its pathogenesis is related to a hyperactivity of lymphocyte B, probably stimulated by complexes of antigens formed by *M. leprae* + "SELF" human tissue, with, probable disfunction of T suppressive lymphocyte.

### The test of Ether in the Practice of Hansen's disease

— Almeida Neto, E.; Nelson de Souza Campos Group

In the intensive routine procedure in the Diagnosis Elucidatory Section in the former

DPL, SP, the author had the idea of using ethyl ether in the research of thermal sensitivity since it boils when in contact with human skin, absorbing heat, thus giving the sensation of cold. For practical purposes, the thermal receivers for cold overcome heat receiver. A piece of cotton soaked in ether sliding over the skin will give a map of the thermal sensitivity in the whole body. Cooling produced by ether volatilization is constant and easily reproduced. Patients with anesthetic areas do not have the sensation of cold, and feel just the opposite: hot in the ether-prove anesthetic area.

### **Resistance to Hansen's disease**

— Pereira Junior, A.C.; Gurfinkel A.C.M.

The authors make a survey on cellular immunity through Matsuda PPD and oidiomicyn tests in 4 groups of patients as follows: 20 patients with collagenase, 20 with lymphoma, 20 with other neoplasias and 20 normal patients (control).

There was consonance of negative reactions in 65% the patients with collagenase, 30% with neoplasias, and 80% with lymphoma. Besides this, Mitsuda and PPD tests were negative in more than 20% of the patients with collagenases and 15% with lymphomas. Only 10% of patients in the control group had negative reactions.

One of the conclusions was the presence of a significant alteration of immunity mediated by ERS cells in patients with lymphomas and collagenases.

### **Reacting Condition**

— Pereira Junior, A.C.

The author tries to define the hansenic reaction picture, and turns to his findings of 1970, pointing out to immunologic mechanisms in the setting of the observed reaction in Virchowian and Borderline patients, simulating an authentic collagenase. He believes the EN- - Erythema nodosum-type reaction to be possible in V and B patients and the Erythema multiforme —type reaction to be an indication of the Borderline form. He characterizes reactional Tuberculoid as a clinical form of the disease,

showing its differences with the tuberculoid reaction.

### **Teaching Hansen's Disease**

— Almeida Neto, E; Nelson de Souza Campos Group.

The author states the necessity of developing among students who are about to graduate, the recognition in diagnosis of incipient cases of Hansen's disease, either through dermatologic routine examination, or through dermatoneurologic examination among contacts. The diagnosis of already polar forms, means almost always the diagnosis of already mutilated patients (tuberculoid), or with several links of contagion when Virchowian. Dermatologic examination must be accurate, associated with systematic research on neural alterations. The investigation of subclinical infections should be stimulated, mainly among the fertile group of Hansen's disease contacts.

### **Hansen's Disease — The Disease, the Patient, Official Legislation in Relation to the Patient and to the Stigmatization**

— Gonçalves, O.S.J.; Bunazar, A.M. B.; De Santis, M.H.; Cappi, U.P.

The purpose of this work is to investigate the changes that occur in Hansen's disease patients concerning their life (family, work, working capacity, social environment) evaluated by a questionnaire at the time of the positive diagnosis, and another interview 6 months later. This procedure will enable an evaluation of objective and subjective conditions of perceiving the disease by the patient and by the people with whom he has some relationship.

Another purpose is to evaluate the probable role that the Official Policy of Health and Government services play in the discriminatory process Hanseniasis patients go through.

The scope of our study is the Diagnosis Elucidatory Section, Division of Sanitary Hansenology and Dermatology, Health Institute of Specialized Technical Services Coordination, Secretary of Health of the State of São Paulo, Brazil, where people under suspicion of the disease are sent for medical examination,

sensitiveness tests and social orientation.

Primary data are obtained through questionnaires given to Hansen's disease patients.

Secondary data are obtained through a survey in the Medical Record in the Division of Sanitary Hansenology and Dermatology; official publications and technical books, specialized literature, newspaper reports, bulletins and general publications.

### **Psychological Profile of Hansen's Disease Patients**

— Altona, R.G.; Lombardi, C.

Two groups comprising 26 (twenty-six) Hansen's disease patients each, the first one with patients who had recently received a positive diagnosis and the second one with former patients were submitted to the test of the tree for evaluation of the perceiving process of self-image.

The results showed characteristics such as: lack of confidence, feeling of worthlessness and importance and persecuting relationship with the world which could be attributed to the impact of the recent diagnosis in the first group, not only keep on, but get even worse in patients who are already being treated, what seems to indicate that the process of self-image deterioration is progressive.

### **The Countereducation on "LEPROSY" by Powerful International Means of Communication**

— Rotberg, A.

Due to lack of technical-administrative and financial resources Governments in Latin America did not succeed in developing an enlightenment of people about the problem of the still generally called "Leprosy"? which remains tied to medieval concepts. On the other hand, the powerful international and national press increase intense and extensively, the ignorance, superstition and 'lepro stigma' making it worse.

The most recent work presented by the author includes four widely known periodicals in Brazil (1), Argentina (2), and United States (3). Not one of the Latin American countries,

which are the great victims of biblical 'lepro stigma', has operational capacity to defeat this massive and permanent countereducation and to educate about "Leprosy... the most negative medical term." (Rolston & Cheesteen).

### **Physical, Psychological and Social Results in Hansen's Disease Patients from Acre, who were submitted to a Programme of Physical Rehabilitation in Lauro de Souza Lima Hospital and the Importance of a Support in the Place of Origin**

— Siqueira, L.M.S.; Macario, O.P.P.; Garbino, J.A.; Baccarelli, R.

Our research tries to show the results of a physical rehabilitation to the patient and the importance of a support work in his place of origin.

It could be observed that, at the time of hospital discharge the results were favorable, but some difficulties in physical, psychological, social and professional aspects were observed, at long term.

Thus, we concluded about the necessity of: support and goods maintenance services (prosthesis, orthosis, footwear), continuity of sanitary education and control; exchange between services — placement and psycho-social support.

### **Classification Section Panel Reactional Phenomena in Hansen's Disease**

— Opromolla, D.V.A.

The reactional phenomena are acute or subacute processes, which interpose each other in the chronic development of Hansen's disease. The reactions that occur in Tuberculoid and Borderline Hanseniasis are mediated by cells, and the ones that occur in the Virchowian Hanseniasis (Erythema nodosum) are related to humoral immunity.

Tuberculoid and Borderline reactions are, in our opinion, always, preceded by bacillary multiplication, which means, in a certain way, a hypersensitivity manifestation with germ destruction,

The basic defect in Hanseniasis would be related to macrophages and the ERS of each

individual would be represented by cells with a certain lysis speed. Thus, in Torpid Tuberculoid patients, who do not have reactions, macrophages can destroy the bacilli completely. In other Tuberculoid patients bacilli which were not destroyed can set Tuberculoid reactions when multiplying.

Something similar would happen in Borderline patients, but their macrophages would have lysis speed lower than bacillary multiplication rate. The body would maintain cellular-immune response as long as the number of germs is small. But, when the number of bacteria increases, the histiocyte which is not capable of making lysis turns into a Virchowian cell. Then, the clinical aspects of the lesions are similar to those of Virchowian patients. Once clinically cured, if these patients have a reactivity, they will develop a cellular-immune response as long as the number of bacilli is small and the bacillary lysis is accessible.

Then, the so-called "pseudoxarcebatation" or "reversal reaction" would be nothing else than immune manifestations mediated by cells occurring in people with Borderline Hanseniasis and who became very similar to Virchowian patients. These patients always present a certain degree of cellular immunity.

Consequently there will be no Borderline group, that is, there would be no instability and Borderline would be a type.

Virchowian patients would never have reaction mediated by cells because their cellular immunity is inhibited or absent. The only type of reaction in Virchowian patients is Erythema nodosum due to their humoral hypersensitivity.

### **Comparative Analysis between Clinical Diagnosis of Hanseniasis and Histopathologic Examinations carried out according to Madrid and Ridley-Jopling Classification**

— René Garrido Neves

This study was carried out with a group of 57 Hansen's disease patients, with different clinical types of the disease: 35 Virchowian, 15 Tuberculoid, 4 Indeterminate and 3 Borderline. The patients were clinically classified according to the International Classification Criterion of Madrid and were in different stages during the treatment.

Comparative histopathologic analysis was carried out by two observers, according to the International and Ridley-Jopling Classifications. The used colorations were eosin-haematoxylin, Ziehl-Wade-Klingmuller and Sudan III (the latter only for Madrid classification).

Analysing histopathologic reports compared to clinical diagnosis of Hansen's disease forms, we got to the following conclusions:

1 — Clinical compatibility and correlation for Indeterminate form and the final stage of regression in Virchowian, Tuberculoid and reactional Tuberculoid forms;

2 — Not significant disagreement between examiners concerning intermediate stages of regression in Virchowian and reactional Tuberculoid forms. The clinical correlation did not change, so that histopathology presented greater sensitiveness in determining regression grading precisely;

3 — Reactional Tuberculoid had high clinical and histopathologic correlation according to Madrid Classification (81.2%) and according to Ridley-Jopling they were considered: Borderline in 46.2%, being BT (43.7%) and TT (37.5%);

4 — Almost all examiners had the same opinion about Virchowian form according to Madrid Classification. Just one case was classified as being Borderline.

5 — According to Ridley-Jopling criteria, Virchowian patients had 48 reports, Borderline 17, subgroups BL-2, BL-1 and BB, corresponding to 35.4%. This percentage of Borderline cases do not seem to have clinical correspondence.

6 — From the small group clinically classified as Borderline no conclusion could be taken. It could only be notified that, from the 8 records, according to Ridley-Jopling Classification, one examiner considered 3 as being BL, thus having clinical correlation.

7 — The only case of reactional Tuberculoid considered to be in transition to Borderline had histopathology position defined in group B.

8 — The usefulness of lipid correlation (Sudan III) in the classification criteria for:

a) precise characterization of Virchowian pole;

- b) recognition of Virchowian residual structures;
- c) differentiation of cytoplasmatic — vacuolation by edema in TR diffuse image, not granular, false-positive;
- d) a better separation of subgroups BT, BB and BL;
- e) helping in early diagnosis of infiltrated Virchowian.

9 — There is the necessity of giving more importance to the presence of plasmacytes satellite cells of Virchowian pole, responsible for the production of immunoglobulin.

10 — Importance of lymphocyte quantitative distribution in granulomas.

11 — Importance of different ways of aggression in nervous terminations specially in Tuberculoid and Virchowian poles to recognize difficulties found when using this criterion to establish with assurance intermediate forms, TR, B and their subgroups.

12 — Practical inconvenience of establishing histopathologic subgroups which do not have clinical elements for a precise correlation.

13 — Convenience of making at least two biopsies in Borderline cases in order to make clinical-histopathologic correlation easier.

### **Practical Aspect of Ridley-Jopling Classification in Hansen's Disease Control Campaigns—Clinical-Sanitary Approach**

— Luiz M. Bechelli

This investigation constitutes a limited trial to evaluate practical aspects of Ridley-Jopling Classification in control programmes. We have tried to compare histopathology in this and in Madrid Classification and see how the results of histopathologic examinations superpose to the initially exclusively clinical classification essentially based on clinical examinations, complemented by bacteriological, histologic and immunological (Mitsuda reaction) examination.

86 patients with different forms of the disease and under treatment were observed. ,

Clinical classification was made by three Hansen's disease specialists and histopathologic examinations were made by two pathologists,

who did not know about clinical results. Each one identified each case separately.

It was observed where the two classifications would agree or disagree concerning each form of the disease, and the difficulties that would be faced when using Ridley-Jopling Classification in prophylaxis campaigns. As a matter of fact, two specialists suggested that this classification should be used in researches but never in control activities.

### **Simplified Classification of Control Programmes Use**

— César D.V. Bernardi

Some classifications of Hansen's Disease commonly used are re-examined and the difficulty of their application in fieldwork is analysed. At the same time that the importance of these classifications for better identification of clinical, histopathologic, bacteriologic and immunologic aspects of the disease is recognized, an alternative simplified classification is suggested for control programmes purposes. In this classification clinical forms which require the same public health procedures are joined in the same group. Thus, the clinical forms can be condensed in basic groups: 1) Form I (pre-granulomatous patients); 2) Form T (non-contagious granulomatous patients); 3) Form V (contagious granulomatous patients).

Clinical and laboratorial criteria which define each group are presented, as well as the correlation between this simplified classification and the classical ones.

### **Works on Epidemiology and Prophylaxis (1st part)**

#### **Clinical, Immunologic, Epidemiologic Prophylactic and Therapeutic Survey on a Hanseniasis Contact Children Community**

— Neves, R.G., Novotny, MA.; Queiroz, J.C.; Nascimento, V.; Neves, S.A.

The authors started observing a group of 251 children whose parents or relatives were Hanseniasis patients and who were under treatment in the surroundings of 'Sanatório Tavares de Macedo' in Niteroi, RJ, Brazil. From the dermato – neurologic examination

of all children, three cases of Virchowian and Borderline Hanseniasis were reported. The most frequent dermatosis were; eczema, pyodermitis, pediculosis, scabies and livedo.

The survey is planned to be continued in the next years, with the same environmental conditions, to supply complementary data about: initial symptoms, effectiveness of prophylaxis methods, therapeutic response and immunologic behaviour.

#### **Analysis of Hansen's Disease Patients "Causa Mortis" in Padre Bento Hospital from 1969 to 1980**

— Margarido, L.C.; Marchese, A.T.; Almeida Neto, E.; Gal, P.

Padre Bento Hospital, belonging to the Secretary of Health of the State of Sao Paulo is a Unit for clinical and surgical occurrences in Hansen's disease patients.

A survey of the records of patients who died from 1969 to 1980, was made to find out their "causa mortis". Results will be presented during the Congress.

#### **Mortality within Hansen's Disease Patients from 1936 to 1940 and from 1971 to 1975**

— Lombardi, C.; Santos Júnior, M.F.Q.; Belda, W.

Some epidemiologic characteristics of two groups of patients. Patients who died from 1936 to 1940 and from 1971 to 1975 — in the State of Sao Paulo, Brazil, are described.

Prevalence and lethality rates of Hansen's disease in the two periods of time are analysed in relation to the mortality rate of population.

The initial clinical form of the disease, place of death and average time of life and disease are also presented. Trying to analyse factors responsible for the differences found in the profiles observed in the two periods of time.

#### **Incidence of Hansen's Disease in the State of Sao Paulo, Brazil, in 1980**

— Santos Junior, M.F.Q.; Belda, W.; Lombardi, C.

Incidence rates of Hansen's disease in the twelve Regional Divisions of Health (DRS) in

IV Brazilian Hansen's Disease Congress the State of Sao Paulo, Brazil in 1980 are presented.

In this year, 2.373 new cases of Hansen's disease were registered in the State of Sao Paulo, leading to an incidence rate of 9.48/1000 inhabitants for the whole state.

Urbanization and population density rates from each Regional Division of Health (DRS) are described and compared with incidence rates.

#### **Demographic Aspects of Hansen's Disease Incidence in the Metropolitan Region of Sao Paulo, Brazil, in 1980**

Belda, W.; Lombardi, C.; Santos Junior, — M.F.Q.

In 1980, 804 cases of Hansen's disease were registered in the metropolitan region of Sao Paulo, Brazil, corresponding to an overall incidence rate of 6.39/1000 inhabitants.

Incidence rates of each city (37) of the Metropolitan Region of Great Sao Paulo are presented.

In order to be compared with incidence levels, density of population and urbanization rates of each one of the 37 cities are also presented.

#### **Hansen's Disease in the State of Paraná, Brazil**

— Tarlé, S.F.; Prevedello Neto, A.

A demonstrative and analytic study of the Hansen's disease in the state of Paraná, Brazil, in the last five years (1977-1981) is presented.

The state has an area of 199.544 km<sup>2</sup>, a population of 7.724.698 inhabitants, according to the last census taken in 1981.

In this census, it was found out a prevalence rate of 2.50 Hansen's disease patients for 1.000 inhabitants, and an incidence rate of 17.46 Hansen's disease patients for every 100.000 inhabitants, which is a high endemic level, according to WHO.

#### **Epidemiologic Situation in the City of Rio de Janeiro**

— Nascimento, L.V.

#### **Epidemiology of Hansen's Disease in the State**

### **of Rio Grande do Sul, Brazil — Descriptive Approach**

— Bernardi, C.D.V.; Grossa Neto, J.; Ricachnevsky, N. Azevedo, L.F.A.; Mori, S.

The authors present geographical, climatic and population aspects of the state of Rio Grande do Sul, and give the historical background of Hansen's disease problem in this region. They describe the distribution of the new cases of the disease, according to clinical form, sex, age group, as well as incidence rates from 1975 to 1981. Discharges occurred during this period of time, prevalence rating, patients and contacts control rates and percentage of patients hospitalized in Hospital Colônia are also described.

### **Section of Epidemiology and Prophylaxis Panel**

#### **Present Situation of Hansen's Disease in the World**

— H. Sansarricq

#### **Outlook of Hansen's Disease Control**

The purpose of this work is to consider prospects of Hansen's disease control with present resources for prophylaxis, taking into account socio-economical, cultural and sanitary aspects of countries, and their public health service conditions as well.

Several aspects are analysed:

- 1 — Current prophylactic apparatus: medicines, chemoprophylaxis, and vaccination;
- 2 — The problem of Hansen's disease in the world;
- 3 — Socio-economical, cultural, and sanitary conditions;
- 4 — Public health services and infrastructure;
- 5 — Factors related to Hansen's disease and others, which can affect the control;
- 6 — Results of campaigns.

In Many countries results are not satisfactory and the outlook of endemic control is not good either. Solutions.

### **Aging as a Factor in Epidemiology of Hansen's Disease**

— Walter Belda.

### **OMSLEP — A recording and notification system of Hansen's disease patients. Clinical classification problems**

— Michel F. Lechat

The available information about Hansen's disease situation is generally recognized to be poor and unsatisfactory in most countries. Besides this, due to the lack of uniformity in the definition of terminology and concepts, the data of different countries and even of different regions in the same country, can be hardly compared and have, therefore, little value under the epidemiologic point of view.

A data recording system providing clinical, epidemiological and operational information within a standard pattern would also allow a valid comparison of the control measures taken by health services in different regions. It would also allow the attainment of data for field tests (for example: vaccination tests).

The OMSLEP Hansen's disease information system has been developed by the Epidemiologic Unit of the Public Health School of the Louvain University in Bruxelles (WHO Cooperating Center for Hansen's disease Epidemiology), in collaboration with the WHO, within a research on information systems used in 78 Hansen's disease control programmes developed in 45 countries.

The OMSLEP recording and information system comprises three file cards:

- 1) a patient individual card (P.I.C.);
- 2) a detection card (D.C.) which shall be filled in at the end of each year, summing up information about all patients recorded during the year;
- 3) an annual statistical card (A.S.C.) which shall be filled in at the end of each year, summing up the information about all patients assisted during the year (whether they have been detected or not, also including those patients who left the records during the year).

This system allow the easy calculation of indexes to evaluate the programme efficiency

in a well-defined strategy and standards context, as well as to the evaluation of the efficiency of Hansen's disease control methods in relation to the reduction in the number of patients, under the epidemiologic point of view.

From these data, three kinds of indexes can be calculated:

- a) operational index at detection;
- b) operational index after detection;
- c) epidemiologic index.

These indexes should be calculated separately for the several types of Hansen's disease. On the other hand, the rate of lepromatous cases in relation to the total of cases detected during the years, constitutes an important operational index at detection, since it allows the evaluation of the eradication scope and the estimation of, to what extent the detection rate differs from the incidence rate during the years.

The indistinct utilization of one or other usual classification, several times in terms of the kind of personnel in charge of the detection, Madrid or Ridley-Jopling, in the several programmes against Hansen's disease require that both classifications are retaken.

The juxtaposition of these two types of classification causes delicate concordance problems which will be discussed.

### **Data Recording in Hansen's Disease**

— Jair Ferreira.

A variety of aspects concerning data recording systems in Hansen's disease are considered. For the recording system to supply useful and reliable data, the following aspects are considered to be fundamental:

1 — Hansen's Disease Records should be nominal and centralized. If possible, a central record for the whole country would be preferable. That is because, as Hansen's disease is a chronic disease, it is not only necessary to register new cases, but also to follow up the situation of patients while they are in the active record. As the following up can last for more than one or two decades, some patients frequently move from their place of treatment and are registered as a new case in the Sanitary Unit where he starts new treatment, while, at the same time, he is

considered to be out of control in the units he used to be treated before. If there is not a nominal and centralized record, it is impossible to detect multiple recording of the same case. In systems where the units give only numerical data to a central record, this kind of error tends to be cumulative and to get worse as time goes by, and is therefore greater in areas where sanitary system is complex, and the programme is older;

2 — In order to simplify programme management patients should be registered in four different records:

a) Record in alphabetic order where filing and following-up data from each patient are registered. This record has direct access and, in Brazil, it should be organized in alphabetic order by the first name. An additional record, using the last name can also be used.

b) Record in numerical order (order of case entry in the system). The purpose of this record is to simplify surveys on the disease incidence. Besides name and date of recording this record should have at least data about sex, age, place of living, how the patient was discovered and his clinical form of the disease.

c) Record of sanitary units, where patients are registered in the last unit they had been for consultation — this record is of great importance when reckoning the necessity of human and material resources to be distributed, specially when in concerns medicine needs.

d) Record of cities, where patients are registered according to the cities where they live presently, which is necessary for the evaluation of epidemiologic and operational indexes in control programmes.

The two latter records should have, in addition to the name, at least data concerning sex, age, clinical form and control situation (date of last examination) of each patient.

3 — There should have a strict recording of discharges, so that accumulation of cured or dead patients in the active record do not alter prevalence rates. Besides discharges for cure, death, transference of area, error of diagnosis and double registering, there still should be an "statistical discharge" for patients who are out of control and of unknown-

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-whereabouts, and who, according to regional life table, are probably dead. For the reckoning of this probability it should be taken into account the age of the patient and time since his last examination.

4 — Grouping of cases by clinical forms should consider the practical aspects of classification, concerning control programmes. Thus, clinical forms of the disease that demand the same Public Health procedures should be in the same group. The use of three basic groups is suggested:

a — Pre-granulomatous cases (Indeterminate Forms):

b — Granulomatous and non-contagious cases (Tuberculoid Form);

c — Granulomatous and contagious cases (Virchowian and Borderline Forms).

Cases not classified yet, should be in another group, and should not be included in the same group of Indeterminate form.

#### **Works on Epidemiology and Prophylaxis (2nd part)**

##### **Epidemiologic Information System in Hansen's Disease, in the secretary of Health in the State of São Paulo, Brazil**

— Moraes, J.C.; Vontobel, M.

The Secretary of Health develops a programme of Hansen's disease control with the participation of different organs. Incidence and prevalence rating were reckoned, till last year, by the "Arquivo Central de Hanseníase" (Central Record for Hansen's Disease) which, due to great amount of registered cases and to lack of human resources was never able to supply up-to-date and detailed information as necessary. The system which is now being implemented is based on electronic data processing and has the advantages of simplifying recording procedures in Health Service Units and Hospitals concerning up-to-date prevalence rates, faster processing and releasing information, better epidemiologic knowledge of the disease, and a better evaluation and supervision system. Computer recording of patients in active record is using data from the annual up-to-dating bulletin. Epidemiologic cards filled out in Health Service

Units will receive a number in the Central Record so that, afterwards, the data will enter the computing terminal in the Health Information Center.

Health Service Units will keep up-to-date data from patients who are in the active record in a list given by the Computing System where any alterations should be notified. The system will identify patients who abandoned, transferences, and other occurrences, automatically. Reports on incidence and prevalence rates will be supplied according to place of treatment and living, age, clinical forms of the disease and ect, with epidemiologic information considered to be significant.

##### **Census of Contacts in the State of Rio Grande do Sul, Brazil**

— Gerbase, A.C.; Ferreira, J.; Gorelik, M.; Melechi, L.E.

Recording results of Hansen's disease patients household contacts in the active record of Rio Grande do Sul started in January, 1st, 1977 are presented. Till June, 30th, 1982 out of 3.418 patients in the active record, 2.806 (82.1%) had their contacts registered in the computing nominal record. The overall amount of contacts registered was 6.374, with an average of 2.27 contacts per patient. This average is lower than the expected one of 3.13, concerning the average of families with 4.13 people in Rio Grande do Sul, according to the census of 1980. The main reason for such a low average is the occurrence of more than one case in the same home. The authors also present the calculations of contacts control real percentage, wich is given by the product: percentage of controlled recorded contacts x percentage of patients with recorded contacts. The importance of recording as a means of making contacts control easier, and the importance of this control are pointed out, once the rate of the disease among home contacts in 1981 was 200 times the rate of the rest of the population.

##### **Probable Origin and First Observations of Hansen's Disease in Rio Grande do Sul**

— Gomes, A.C.B.

A survey on probable origins and ways of permeation of Hansen's disease in the state of Rio Grande do Sul is carried out. First scientific observations on the disease are also presented.

### **Prevalence of Hansen's Disease by Ethnic Groups in Rio Grande do Sul — Analytical Approach**

— Souza, A.M.P.V.; Ferreira, J.; Abujamra, M.E.B.

The authors present data which show that the prevalence of Hansen's disease in Rio Grande do Sul is greater among white people than among black people or mulattoes. They also present data suggesting that, concerning white people, prevalence of the disease is greater among the ones with German, Italian or Polish origins, than the ones with Portuguese or Spanish origins. Some hypothesis for this phenomenon are analysed. The most accepted one is that groups with higher prevalence which come from non-endemic areas (Central Europe) did not develop secular immunity in the same degree the groups with lower prevalence, which came from endemic areas (Africa, Iberian Peninsula) did.

### **Incidence of Hansen's Disease by Age Groups and Clinical Form — Analytical Approach**

— Ferreira, J.; Campos, C.C.E.; Weis, H.C.; Carvalho, M.E.

Some epidemiologic aspects of Hansen's disease are presented:

- 1) the high percentage of people below 15 years old in areas of high prevalence, compared with low prevalence areas with low percentage of cases in this age group;
- 2) greater percentage of tuberculoid form in high prevalence areas than in areas with low prevalence;
- 3) greater percentage of tuberculoid forms in children than in adults.

A hypothesis is presented to explain this phenomenon, based on the following assumptions:

- 1) among people capable of creating cellular

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- 2) as years pass, people can accumulate small bacillary load up to the point that it would be enough to provoke Hansen's disease;
- 3) in higher endemic areas, due to greater contact with bacillary patients, an individual has greater possibility of accumulating a sufficient load to develop the disease in earlier stage of life.

### **Section of Extra Works**

#### **An Attempt to Cultivate Mycobacterium Leprae in Human Plasma**

— (CELSA) Miranda, RN.; Emmel, O.T.; Techanat, H.S.

Taking into account all unsuccessful attempts to cultivate *M. leprae*, a method of investigation was imagined. This comprises the bacillus sowing in health lepromina-negative people, taken from Virchowian and Borderline patients. The project of surveys started in January 1981 (number 33) and 10 experiments have been carried out till now, with different donors. In two of these experiments it was observed an increase of an acid-alcohol-resistant and pleomorphic germ similar to the *M. leprae*. The second and most exuberant of these experiments, is on study.

### **Programme of Sanitary Dermatology in the State of Amazonas, Brazil — Situation till December 1981**

— Sinésio Talhari, Gilberto Fernandes, Maria da Graça Souza Cunha, Lúcio T. Ihara, Maria de Fátima Maroja, Anette C. Talhari, José Carlos Sardinha, Maria Angela T. de Alcalde.

The authors study the main dermatologic problem in the state, specially the 15.767 cases of Hansen's disease that have been diagnosed.

### **Primitive Visceral Virchowian Hansen's Disease — Rubem D. Azulay**

The author presented a case of a fifty-year-

-old woman who had, once in a while, fever with polyarthralgia, polyadenopathy, serious anaemia, and spleno-and-hepatomegalia. Biopsy of ganglion, liver and bone marrow showed Virchowian infiltration with globis; bacterios-copic examination of skin and nasal mucus were repeated and were b.a.a.r. — negative. Skin and nerves were normal.

### **Cervical Myeloradiculopathy by Spondylarthrosis Simulating Hansen's Disease**

— Miguel Mascani

J. M. M., white, married, 54 years old, bricklayer, living, in Taubaté, no Paulo, where he comes from. The patient presented hypoesthesia in upper limbs with amyotrophy in the hands. He was participating in Hansen's disease sub-programme in CS Taubaté in 09.11.81 submitted to DDS therapy in 05.11.82 when new diagnosis was made. The patient went on specialized surgery and is now having physiotherapeutic treatment.

### **Distignization of Hansen's Disease — Performance of the Multiprofessional Team of DRS-3 (Vale do Paraíba Paulista)**

— Miguel Mascani, Eni Pestana, Rubens Nó-brega, Aloisio Camara, Ederci P.O. Gomes, Marcia A.F. dos Santos, Maria Mishima.

The authors present the results of their performance in the community entities (schools, unions, community centers, religious entities).

### **Monoclonal Antibodies in the Characterization of Virchowian Hansen's Disease**

—Fátima de B. F. Alvarenga, Jarbas A. Porto, Lissa Sudo, Maria Auxiliadora J. Souza, Ademir A. Figueiredo, Cerli Rocha Gattass e Eu-zemir N. Sarno.

Skin lesion biopsy of eight Virchowian patients of "Serviço de Dermatologia do Hospital de Clínicas da Universidade do Estado do Rio de Janeiro" were submitted to immunofluorescence, in order to identify characteristic antigens of cellular population by monoclonal antibodies. Antibodies from Ortho Pharmaceutical Co. were used (pleasantly

given by Dr. G. Gldstein): OKT4 and OKTB8 which characterize subpopulation T-helper indutor and T-supressor cytotoxic respectively; 01311 which characterizes monocyte antigen; and OKIa which reacts with molecule HLA — DR (similar to Ia).

A predominance of OKT8+ population in relation to OKT4+ population in all examined lesions, was found, what suggests the participation of T lymphocyte in the control of macrophage effector function. Besides these we observed positiveness for HLA DR in the great majority of inf trate and evidences of OKM1 antigen loss during cell maturation process of mononuclear phagocytic system.

### **Laboratory Section Panel**

#### **Importance of Immunopathology in Etiopathogeny of Hansen's Disease**

— Rubem David Azulay

Till not so long ago, it was given no importance to lymphocyte in pathology; currently, it is known that the lymphocyte is the fulcrum of immunologic reactions.

Basically, the lymphocytes are of two types: T and B; the first one is related to cellular hypersensibility and the second one to humoral; thus, both of them have an important immunologic role in the study of Hansen's disease, since humoral and cellular aspects are intensively present in this disease.

Other types of lymphocytes with immuno-logic importance have been recently described: (helper) which works together with B lymphocyte in the production of antibodies; lymphocyte (killer) with citotoxic action S lymphocyte (supressor) which, acting with B has the property of inhibiting the production of antibodies. On the other hand, the macrophage has a basic role in cellular immunity mechanism; T lymphocyte system + macrophage is of great importance in infection resistance aspect.

The study of polarity principle (Rabello, 1938) is based on modern immunology. Cellular hypersensibility can be either specific or non-specific; the first one is responsible for infection resistance and is evaluated through hansenin, blastic transformation, MIF tests and others; the second one is evaluated through DNCB,

candidin, trichophytin, histoplasmin, vaccinia, streptoKinase/streptodonase tests and others. Humoral hypersensibility can also be specific or non-specific: the first one is evaluated through precipitation, immunodiffusion and immunofluorescence techniques, which show the increase of serum antibodies *anti M. hansenii*; the second one shows a series of non-specific antibodies specially those of self-aggression which explains hansen's self-aggressive disease (Azulay, 1978). On the other hand, inoculation of *M. hansenii* in animals has given scientific support for immunologic findings interpretation. Reactional specific pictures are based on immunologic findings specific cellular hypersensibility in reactional tuberculoid is humoral hypersensibility.

### The Role of Lymph Node Studies in Hansen's Disease

— Raul Negrão Fleury

With the aim of evaluating the role of lymph node in hansenic infection process, lymph nodes of 7 ganglionic chains (cervical, axillary, inguinal, periaortic, mesenteric and mediastinal) were studied in 30 necropsies if Virchowian patients (16 Virchowian patients with regressive lesions, 6 with residual lesions, 3 with reactivation and 5 non-Virchowian patients). Another series consists of simultaneous and ganglionic biopsies in 10 Virchowian active patients, 10 Virchowian regressive patients and 10 Virchowian residual patients. The comparison of the results obtained with bibliographic data has led us to the following conclusions:

1 — Lymph nodes, may represent the stage of hansenic infection evolution much more accurately than any other regional lymph nodes related to this infection.

2 — The relation of lymph nodes with Hansen's disease occurs through the drainage, by lymphatic via, of isolated bacilli, or inside histiocytes, since visceral and neural-cutaneous areas with infection till regional lymph nodes.

3 — The captivation of bacilli by histiocytes in cortical and medullary areas causes histiocyte and bacilli proliferation in such areas, leading to the formation of specific hansenic infiltrate in lymphatic parenchyma.

4 — The clear stratification of specific infiltrates in cortical and para-cortical areas, where the younger infiltrates are always more superficial and the more regressive ones are always more deeply localized, suggests that:

4.1 — Histiocyte Proliferation begins in cortical areas near the marginal sinus.

4.2 — The deepen of infiltrates towards the paracortical areas is done through a mechanism of compression of the older infiltrates by the more recent ones which are being formed in superficial cortical areas.

4.3 — The non alternance of recent and regressive infiltrates in the deep paracortical areas not only strengthens the former conclusion but also suggests an obstruction through the cortical sinus probably due to their compression starting from the more superficial specific infiltrates.

5 — The organism has a clear difficulty to eliminate extenso residual Virchowian infiltrates from the paracortical areas of the lymph nodes even after several years of inactivity of the infection.

6 — The maintenance of extenso specific residual infiltrates in paracortical areas of Virchowian lymph nodes, even after 10 or more years of inactivity of the infection, is an evidence that opposes the idea of lymphocytic population in these areas, after the bacilloscopic cure.

7 — The preservation of paracortical areas in mediastinal, mesenteric, lymph nodes and in most cases also in periaortic lymph nodes of Virchowian patients suggests that the organism can maintain an important contingent of tyme-dependent lymphocytes in circulation although the extense specific involvement of paracortical areas of lymph nodes of cervical, axillary, inguinal and hepatic ganglion chains.

8 — The coexistence in lymph nodes of 4 cases of granulomatous tuberculoid reaction of known or unknown etiology and Virchowian or extenso borderline infiltrate in paracortical areas, opposes the statement that this paracortical infiltration would lead to a generalized depression of the IMC.

9 — In reactivated Virchowian patients, the

limitation of the conjunction of typical bacilli and recent specific infiltrate exclusively to the lymph nodes superficial areas, which drain cutaneous areas, suggests that the general process of reactivation in Hansen's disease begins at skin an peripheral nerves level.

### Identification of the *Mycobacterium leprae* — Competence Test

— Jacinto Convit

### Identification of the *Mycobacterium Leprae*

An important obstacle for the identification of the *Mycobacterium Leprae* has been the impossibility of its cultivation in vitro in a bacteriologic means. In 1970, its experimental transmission to the armadillo was obtained producing bacteria in sufficient amounts for several studies. Both the armadillo and the human show invasion of the *M. leprae* in their nervers. This was considered to be an identification method as it does not happen with other mycobacteria.

The oldest test of identification of the *M leprae* is the Mitsuda test mainly the fact that the lepromatous patient does not present any kind of macroscopic reaction against the injection of this antigen. This does not occur with other kinds of mycobacteria.

Another method developed around 1960 was the experimental inoculation of the *M. leprae* in the mouse paw made by Shepard. This method, however, is not parctical since approximately six months are necessary so that the results can be observed.

An easy and reproducible identification method was developed in our laboratories. It is based in the fact that the *M. Leprae* is the only mycobacterium known which does not disappear with Ziehl-Neelsen or carbo auramine after being treated during two hours at room temperature with pyridine. This is an easy carrying out method within reach of any laboratory.

After that, another method called 'competence test' used to eliminate the *M. leprae* from the tissues through which the capacity or not of an individual to eliminate these bacteria after being injected by intradermal autoclaved via is detected, has been also developed in our

laboratories. Normal individuals eliminate them but lepromatous or potentially lepromatous patients are nor capable of doing this elimination. This only happens with the *M. leprae*.

Another procedure is the fenol test developed by Prabhkaran, which has not been reproduced in other laboratories.

Studies on specific antigens against the *M. leprae* and DNA analysis are being developed; the preliminary results of these studies are very promising.

### Considerations on the improbability of anti-leprosy vaccination

— Abrahão Rotberg

Approximately 20% of human species constitutes the Hansen Anergic Margin (MIM) genetically incapable of reacting to the *Mycobacterium hansenii* and becoming Mitsuda-positive. These are the predisposed individuals who, infected by this bacillus and, with the co-operation of 'accessory factors' will present several aspect Hansen's disease bacillary lesions. On the opposite, there are the individuals holding "Factor N" (natural) of resistance who will remain healthy or will present occasionally non-differentiated and tuberculoid uninhabited lesions. Between these two extreme cases, there is the wide range of 'intermediate' reactivity, responsible for the appearance of lesions nowadays known as "borderline".

This pathogenic hypothesis, proposed after observations made in Sao Paulo (1933-1939) opposed the idea then current that the predisposition to Hansen's disease was due to debilitations (intestinal parasitosis), malaria, malnutrition, etc) and to the Mitsuda interpretation that the Mitsuda-negative state would be a consequence of the disease aggravation. For this and other several reasons, this hypothesis has been greatly opposed, although being generally accepted nowadays. It is also accepted to be responsible for the disintegration of the Hansen bacillus and for the production of "granuloma", etc (to the "cellular immunity defect", "genetic deficiency", "inherited incapacity for disintegrating the Hansen bacillus and producing granuloma", etc (to the MHA) or "natural reactivity", "potential immunity", "innate cellular immunity", "Ca-

parity of the host to recognize the Hansen bacillus", etc (to the factor N).

Fernandez' observation that Mitsuda-negative children became Mitsuda-positive through BCG administration, seemed to correspond to the beginning of vaccination against Hansen's disease. With the development and multiplication of the studies, it was observed that the MHA continued to be Mitsuda-negative, being identifiable through the percentages of 12.5 to 25% of "positivation exceptions". This fact made the BCG unlikely to play an important preventive role, since it neither eliminated nor reduced the MHA. The failure in attempts of prevention through BCG confirmed this pessimistic prevision. However, the subject continues under consideration and today is being studied extensively, with a great variety of vaccines, although a committee of the World Health Organization had declared "the improbability that this kind of study can produce a specific anti-leprosy vaccine in an early future".

It is highly desirable that less pessimistic conclusions are reached. However, before extensive, lingering and expensive observations on the matter are made, it is useful that the several types of vaccines proposed eliminate or, at least, reduce the MHA significantly in comparative studies to the classic BCG-although immunity states independent from the Mitsuda-positivity are to be reduced.

In any way, vaccination, either through BCG or any other equivalent or superior material, seems to be indicated to the general population and specially in Hansen's disease focuses since it stimulates artificially and prematurely the "natural reactors" containing Factor N. In fact, it is preferably to anticipate the Mitsuda positivation of the majority with "innate capacity of reacting" than wait that it can occur by action of the *M. tuberculosis* or, worse, by the *Mycobacterium Hansenii*

### Papers on Laboratory

#### Activity of the Soluble Antigen of the *M. Leprae* in Hansen's disease patients

— Damasco, M.H.S.; Viana, S.M.; Saad, M.H.F.; Gallo, M.E.N.; Almeida, S.M.R.; Andrade, L. M.C.

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Antigens of the *M. leprae* were tested in 28 Hansen's disease patients and in 9 contacts. The results were compared to the Mitsuda reaction.

The antigens were obtained from human and armadillo hansenoms and denominated Ag1Tc, Ag2Tc, Ag1T1/2, Ag2T1/2, Ag1Hc and Ag2Hc. These antigens were injected by intradermal via in 37 individuals being 15 Virchowian patients, 8 tuberculoid, 5 indeterminate and 9 contacts. The reading of the tests was made 48 hours after the injection and the results compared to the Mitsuda reaction.

#### Conversion of the Component C3 of the complement in Hansen's disease patients serum

— Kliemann, T.A.E.; Martinez, E.A.E.; Irulegui, I.; Souza, Z.W.T.

The levels of total C3 (native C3 and its degradation products) and the degree of conversion of the native C3 in its degradation products were studied in sera of Virchowian, tuberculoid and indeterminate patients, in reaction of the erythema nodosum type and in sera of normal individuals. The values of total C3 did not differ significantly from the level of 0.01 and 0.001. However, they were significant to the level of 0.05 in the Virchowian patients in relation to the control group and to the patients in reaction. The conversion of C3 and its degradation products was significantly greater in sera of patients than in sem in the control group.

#### Study of the kidney in patients with Hansen's disease reaction

— Jorgetti, V.; Saldanha, L.B.; Silva, A.M.M.; Giordan, D.; Margarido, L.C.; Almeida Neto, E.; Nelson de Souza Campos group — HCFMUSP and Hospital Padre Bento

The renal organs of patients with Hansen's disease reactions presenting alterations of the urinary sediment, proteinuria, hematuria and normal renal function are being studied. Rotine laboratorial examinations to study the renal function and renal biopsy at OM, EM and immunofluorescence level were made. The Hansen's disease study, under the dermatological point of view made concomitantly.

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**Histopathological study of Hansen's disease neuritis through electronic microscopy and coloration method by the picrosirius — polarization**

— Marchese, A.J.T.; Junqueira, L.C.V.; Barros, C.; Montes, G.; Almeida Neto, E.; Margarido, L.C.; Gal. P.

The neural collagen can be of two types: type I, found in the epineurium and constituted by dense layers with thick fibers and type **III**, in the endoneurium with slender layers and thin fibers. The difference between these two types of collagens is clear in the preparations of electronic microscopy with the fibers of different diameters being clearly identifiable. With the picrosirius-polarization method, the coloration of these two types of collagen is quite differentiated: type I with a red or yellow color and type **III** greenish-colored.

Type **III** — collagen is produced by the Schwann cell.

In histopathological sections of the nerves affected by the Hansen's disease, an extense proliferation of collagen I and **III** was found.

Since the Schwann cell is fundamental in the physiopathology of the Hansen's disease and being present also in collagen **III** it produces, this is a line for researches on the global knowledge of Hansen's disease neuritis physiopathology.

**Specific Arthritis in Hansen's disease patients Laboratorial studies and synovia biopsy**

— Missi, S.M.; Schaf, S.; Almeida Neto, E.; Margarido, L.C.; Clínica Reumatológica — HCFM USP; Nelson de Souza Campos group — HCFMUSP; Hospital Padre Bento

Five Hansen's disease patients presenting articular phenomena were studied. The parameters used for this evaluation were: clinical-rheumatological examination, laboratorial tests (FAN-LE, FR, WR, Complement), articular radiological examination and synovial puncture biopsy. Three of the patients studied belonged clinically to the non reactional Vuchowian form, while two presented polyarthritis phenomena including wrists, elbows and knees; the third patient presented a monoarthritis in the right

knee. The synovial biopsy of these patients showed the presence of BAAR with inflammatory infiltrate.

The other patients presented symmetrical polyarthritis affecting wrists, metacarpophalangeal and interphalangeal proximal joints and knees; the first one belonged to the TR form and the second one to the V reactional regressive form; both biopsies showed a non-specific chronic synovitis.

More detailed conclusions on the laboratorial and anatomopathological part will be presented in the Congress.

**Comparative study on Ziehl-Wade-Klingmuller and Nyka Staining Methods applied to the Indeterminate and Tuberculoid Hansen's disease diagnosis**

— Nascimento, L.V.; Mendonça, A.M.N.; Neves, R.G.

**Visceral lesions during periods of reversal reactions outbreaks (pseudo-exacerbation reaction)**

— Fleury, R.N.

Reversal reaction is considered to be the development of reactional outbreaks with tuberculoid or borderline characteristics in patients previously considered to be virchowian. The interpretations for this phenomenon can be discussed but they mean, structurally, the appearance of tuberculoid granulomas in areas containing bacillary antigens in an organism that has been developing only virchowian granulomas. Tuberculoid granulomas present a greater capacity of tissue aggression.

Clinically, this fact causes, some times, the aggravation of neurologic lesions. Since patients developing virchowian characteristics can present bacillary antigens in multiple organic localizations, they can also develop important granulomas and tissue lesions. These are the ones which will be demonstrated through necroscopic findings in four patients.

**Gell and Coombs — Type I Hypersensitivity phenomena in the Hansens's disease reaction**

— Fliess, E.L.

**Clinical and histological evaluation of 1,243**

**cases with Hansen's disease diagnosis**

— Del Pino, G.; Bakos, L.; Peres, M.P.; Muller, L.F.B.; Busko, M.G.

1.243 histopathological examinations made in patients of sanitary dermatology programmes in the state of Rio Grande do Sul, Brazil between November 13, 1974 and August 31, 1982 are reviewed. From this total, 1,098 cases involved the initial diagnosis of Hansen's disease.

Clinical diagnosis, results of the histopathological examinations and the recording final diagnosis of these 1,098 patients are compared, proving that:

1) Although the histopathological examination showed the presence of Hansen's disease in some cases with suspicion of other diseases, on the other hand, it threw aside a great number of Hansen's disease clinical suspicions so that the number of cases recorded was 18.2% lower than the number of cases classically suspected.

2) This reduction reflected mostly in the cases of the indeterminate form that, in the recording were reduced to less than 40% in relation to the cases clinically suspected. In the cases of the granulomatous forms, however, there was a mutual comparison in the diagnosis errors so that the number and rate of the cases reported do not differ statistically from the cases clinically suspected.

These data can explain the low rate of I forms in Rio Grande do Sul in relation to other Brazilian states.

**Hansen's disease bacterioscopic study in 234 virchowian and borderline patients (Comparison of the positivity found in fingers with other classical collecting places**

Valenti, J.M.; Peres, M.P.; Busko, M.G.; Rosa, L.S.; Ferreira, J.; Abu Jamra, M.E.B.

A sample of 234 virchowian and borderline — form patients, in different stages of treatment was submitted to bacterioscopic examination for research of BAAR. In all patients, the material was collected from 6 places:

- 1) back of the first phalanx of the fingers
- 2) ear-lap
- 3) buttock

- 4) knee
- 5) elbows
- 6) nasal mucus

According to the localization, the examination was positive in the following frequency:

- |                |               |
|----------------|---------------|
| 1) ear-lap     | — 55 patients |
| 2) buttock     | — 52 patients |
| 3) knee        | — 49 patients |
| 4) elbow       | — 47 patients |
| 5) fingers     | — 33 patients |
| 6) nasal mucus | — 20 patients |

These data show that the examination made in the fingers does not differ statistically from that made in the mucus and elbow and that it is statistically less sensitive than those made in the ear-lap, buttock and knees. The four classical places (ear-lap, buttock, knee and elbow) do not differ statistically in terms of sensitivity.

— Session on Therapeutics Panel

**Aspects on surgical rehabilitation in Hansen's disease**

— Marcos C. L. Virmond

The author stresses the importance of surgical rehabilitation on Hansen's disease patient and its place in the general control programme.

The physiopathology of deformities is briefly discussed and several re-constructive techniques for surgical rehabilitation are presented.

**Therapeutics of Hansen's disease reactions**

— Juan Carlos Gatti

Table of the main forms of reactions and their definitions:

- 1) Treatment of the Erythema Nodosum Leprosum (ENL)
  - a) slight or smaller forms
  - b) severe or greater forms
 Thalidomide — dose. Administration time; its real value in Hansen's disease reactions. Side-effects — anovulatory and thalidomide Thalidomide-dependence  
 Its probable action mechanism  
 Clofazimin: indications, dose, side-effects, etc  
 Corticosteroids: advantages and inconveniences. Dose and time of administration.

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Other medications

## 2) Reversal reaction treatment

Chosen medications

Their doses according to their intensity

a) mild or light forms

b) severe or great forms

Time of medication

Different therapeutic schedules

## 3) Therapeutics of the neuritis during reactions

General concepts and chosen therapeutics

**Sulfone-resistance**

— Sinésio Talhari

In 1937, Buttle and colleagues were the first to call the attention to the therapeutic properties of sulfone. They verified that the sulfone was 100 times more potent than the sulfamilamide in experimental infections with streptococcus in mice. In man, therapeutic trials with dosages of 1-2 grams produced toxic effects, mainly methemoglobinemia and the drug was then abandoned.

The works of Feldman and colleagues using Promin in experimental infections with *M. tuberculosis*, in 1940, and the ones of Cowdry in 1941, using the same drug in murine Hansen's disease led Faget to use the sulfone in 1941, in the treatment of human Hansen's disease.

In their first publication after one year of Promin utilization, Faget and colleagues concluded: "Promin can be considered to be the drug which opened a new frontier in the chemotherapy of micobacterial diseases".

## Treatment of Hansen's disease with sulfones

—Faget 22 original patients — 30-year follow-up under sulfone therapy (Jacobson and Trautman —1971).

1) initially, almost all patients recovered notably and, in 18 cases, it was noticed that the disease has been inactivated;

2) Two patients died after three years of treatment and were not included in this study;

3) Although the initial results had been excellent, the continuation, at long-term, in the 18 patients who had become negative, were not encouraging: there was the recurrence of the disease in 11 patients; 5 out of these 11

patients had never become negative and 3 out of these 5 reactivate a second time and remained with active disease from then on;

4) in only 9 of the 20 patients, the MH became "permanently" negative. The results would be poor if the 9 patients had lived longer;

5) only 4 of the 20 patients had an excellent bacteriologic response at long-term;

6) 13 of these 20 patients are alive and 10 of these 13 have active disease;

7) 8 of these 10 patients are probably sulfone-resistant and are being treated with clofazimine;

8) the results of this study showed clearly that the struggle against the MH is far from being successful.

Sulfone-resistance in Ethiopia (Pearson and colleagues — 1979):

— during the period 1973 — 1977, from 1,500 patients recorded as virchowian, it was suspected that 254 cases presented sulfone-resistance; 51 cases had sulfone-resistance confirmed by the inoculation in mice and 57 were clinically confirmed;

— from other 106 suspected in other areas of Ethiopia, 28 were confirmed by the inoculation;

— 11 among 27 patients presenting recurrence, evidenced sulfone-resistance;

— 16 cases of early sulfone-resistance in 29 virchowian patients tested.

Studies made in Malasia, in 1981, estimated that the prevalence of sulfone-resistance is around 10% of all bacillary cases treated.

Works in progress in India, evidenced that the prevalence of secondary sulfone-resistance is around 70/1000. The sulfone-resistance has already been reported in 25 countries. In Brazil, according to the bibliography consulted, there is no cases of sulfone-resistance recorded.

Floch, Lowe, Cochrane and Lima were the first to report the problem of sulfone-resistance more than 30 years ago.

In the Congress of Madrid, in 1953, Floch warned, in relation to the low dosages of sulfone, about the serious possibility of sulfone-resistance.

Erickson, Wolcott and Ross, Garret and Muir, in the 50's, were the first to report cases with clinical suspicion of sulfone-resistance.

The laboratorial confirmation was not possible at that time

In 1964, Pettit and Rees, showed the sulfone-resistance in 3 patients through the inoculation in mice.

New evidences of sulfone-resistance arouse and in the *Chemotherapy for Anti-Hansenic struggle Programmes* — WHO — 1981, it is observed that: "It is urgent that measures to prevent the increase of sulfone resistance are taken...".

Main causes of secondary sulfone resistance:

- administration of low dosages of sulfone;
- monotherapy;
- treatment irregularity.

The primary sulfone resistance arises from secondary sulfone-resistant patients.

Suggested aspects for sulfone resistance suspicion:

- 1) appearance of lesions of the histoid Hansen's disease type in patients under treatment.
- 2) patients holding virchowian, histoid-variety Hansen's disease.
- 3) infiltration in areas usually preserved in VH: antecubital cavities; axillas, groins, neck, medium dorsal line (along the vertebral column) and ocular conjunctiva.
- 4) reversal reaction of late appearance: the majority of patients develop reversal reactions within 1 - 2 years after the beginning of the treatment. The uprising of these reactions in later periods leads to the clinical suspicion of sulfone resistance.

5) late uprising ENH.

6) cases of recurrence.

Procedures in cases of clinical suspicion.

- collecting of material for inoculation (if possible);
- supervised treatment — preferably with the patient interned, with the administration of DDS maximum dosage during 3 - 6 months. Bacilloscopy and/or biopsy for clinical follow-up;
- if there is no modification in the clinical and bacteriologic presentation, the sulfone resistance is then clinically confirmed;
- to change the therapeutic scheme: rifampi-

cin+cofazimin — 6 months and after, clofazimin 100 mg/day or in alternate days.

The WHO (1981) has been suggesting the utilization of a multidrug scheme as a measure for treatment of sulfone-resistant cases and bacillary treatment — initial cases: DDS — 1 to 2 mg/kg of weight/day + clofazimin — 50 to 100 mg/day and 300 mg/month, supervised + rifampicin — 600 mg/month, supervised + Etionamide or Protonamide — 5 to 10 mg/kg of weight/month, supervised. The scheme will be made at least for 2 years and the patient will then be discharged.

### Present situation of Hansen's disease chemotherapy

— Antonio Carlos Pereira Junior

There are several therapeutical difficulties in relation to the Hansen's disease due to laboratorial investigations difficulties, to the slowness of responses to chemotherapy and to resistance problems which are being determined in relation to sulfone (slow-action sulfa drugs), the Rifampicin. These problems originate, mainly from the irregular utilization of drugs and sub-doses. We are then restricted to three products, practically: Sulfone, Rifampicin and Clofazimin. Other products of confirmed therapeutic action such as the Thiosemicarbazones are not manufactured anymore.

This way, and due to the poor resources available, the results obtained with the procedures adopted are indicated and evaluated as following:

#### *Therapeutic Indications*

Virchowian — borderline — indeterminate with negative Mitsuda

Sulfone 100 mg/day

Rifampicin 600 mg/day

Tuberculoid and indeterminate with positive Mitsuda

DDS 100 mg/day

Reactional Tuberculoids Sulfone 100 mg/day

Triamcinolom 16 mg/day

Pure Neuritic forms

Clofazimin 100 mg every 8 hours

— In associations

**HANSEN'S DISEASE REACTION****EN Type**

Thalidomide 300 mg/day, 1 tablet 100 mg every 8 hours. Specific therapeutics shall not be removed.

General caution.

**EP type**

Specific: DDS 100 mg/day + rifampicin 600 mg + thalidomide 300 mg + triaminolol 16 mg. In all cases of necrosing reaction, other pathologies shall be investigated: diabetes, infectious focus, hepatitis, etc.

**PROBLEMS WITH SULFONE**

Anemia — one case of aplastic anemia, lack of glucose 6 dehy drogenase phosphate was reported — some cases of methemoglobin with cyanosis of mucosas and extremities.

There was no observation of Stevens-Johnson in hansen's disease patients.

Sulfone resistance (low doses and irregular utilization).

**PROBLEMS WITH RIFAMPICIN**

High cost

Reddish urine

Hepatic injuries

Resistance

Inhibition of anovulatory action

**PROBLEMS WITH LAMPREN (CLOFAZIMIN)**

Cost

Pigmentation

Hepatopathies

Ichthyosis aspect

Hansen's disease reaction even with the use of medicines. The resistance to Clofazimin with inoculation in mice has not been demonstrated yet.

**PROBLEMS WITH THALIDOMIDE**

Mouth dryness

Somnolence

Reduction of sexual potence

Teratogenesis

Dependence

**EVOLUTION:****V FORMS**

Clinical and bacilloscopic recovery between

3 and 5 years Maintain DDS — 100 mg always.

**B FORMS**

Clinical and bacilloscopic recovery between 2 and 3 years. Discharge only with positive Mitsuda.

**TUBERCULOID FORMS**

Clinical cure around 2 years.

**INDETERMINATE FORMS**

Clinical cure between 1 and 2 years. For the Mitsuda — negative, mantain DDS always. Try positivation with oral BCG, 6 doses, every 15 days.

**Treatment of Hansen's disease neuritis**

— Antônio T. Marchese

**Work on therapeutics****Surgical Treatment of Hansen s disease neuropathies**

— Charosky, C.B.; Gatti, J.C.; Cardama, J.E.

A classification of Hansen's disease patients neuropathies is presented and three physiopathologic mechanisms are identified:

A) Intrafascicular lesion

B) Intranural-extrafascicular lesion

C) Extranural lesion

Surgical treatments with different techniques, according to the lesion mechanism producing the injury in the peripheral nerve are presented.

1) Epineurotomy: in the reactingneuropathies with intraneural edema and epineural fibrosis.

2) Endoneurolisis: in intraneural fibrosis showed through neurography.

3) Epineurectomy: in neural abscess of tuberculoid patients.

4) Simple Neurolisis: in extrinsic nervous compressions (S. carpian tunnel, S. Guyon canal, etc).

A casuistic of 68 patients operated with these characteristics is presented.

The necessity of eliminating the use oil non-discriminating terms such as "leprous neuritis" and substituting them for a more explicit terminology which make the identification of different pathogenic mechanisms possible is emphasized.

### **Double-blind study to evaluate the therapeutic efficiency of German (CG-217) and Brazilian (Brasifa and CEME) thalidomides**

— Almeida Neto, E.; Margarido, L.C.; Cimino, J.S.(ainmemoriam); Rosa Y. H. C. T. Marchese, A.J.T.; Gal, P.

With the objective of comparing the therapeutic activity of German thalidomide with two samples of Brazilian origin, a double-blind test was planned in Hansen's disease reaction treatment. The samples in active substance and the results were kept secret. The results are still being evaluated and will be presented in the Congress.

### **Hansen's disease patients Group: a psychotherapeutic approach**

— Osmo, L.R.T.; Angelico, Si.; Ono, E.T.

The authors report a four-month experience with a group comprising 14 Hansen's disease patients, under treatment at "Centro de Saúde da Lapa — SP — Brazil".

The objective is to provide psychological conditions so that the patients can easily overcome the necessary stages for treatment and control of the disease and can acquire conditions for a more satisfactory personal and social contact.

Although short-lasting, the first results of this group can already be noticed, as in the *case* of a patient who could not work during 10 years and is now working. The possibility that patients can share their common anxieties in relation to the disease is observed to be creating conditions to the development of a new view of themselves as persons, recognizing that some of their difficulties are not due to the disease itself but are related to conflicting aspects of their own personality.

The authors conclude on the necessity of a longer period for evaluating the group effects but these first results evidence this kind of activity as a valuable instrument as a therapeutic complementation to Hansen's disease.

### **Neurologic evaluation in Hansen's disease**

— Marchese, A.J.T.; Almeida Neto, E.; Margarido, L.C.; Teixeira, M.J.; Gal, P.; Barros, C.

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The onset of the peripheral nervous system is premature and can be unique. There is the necessity of a complete evaluation of neural alterations in relation to sensitivity, motricity and trophism for the early diagnosis of Hansen's disease. The Tinel signal (percussion of nervous trunks) is used in our group as an indicative of neural affectedness and the experience has shown its usefulness. Global neurologic evaluation shall include electroneurographic examination which allows a quantitative evaluation: in the detection of sub-clinical lesions, in the quantification of clinical findings, in the analysis of clinical evolution. In a given phase of neuritis, it is indispensable the neurosurgical treatment and the global neurologic evaluation allows the indication in sound basis. With the global neurologic evaluation, the differential diagnosis problems are almost eliminated.

### **Some aspects of humoral immunity of Hansen's disease patients clinically cured**

— Arruda, M.S.P.; Arruda, O.S.; Opromolla, D. VA.; Ura, S.; Venturini, C.F.

35 patients (30 virchowian and 5 borderline) clinically cured have been evaluated by the presence of auto antibodies (rheumatoid and antinucleus factors) positivity to VDRL, presence of HB antigens and electrophoretic proteinogram. From these total, 20 were rubino-positive and the other 15 were negative.

According to the evaluation made, it could be observed:

1. Presence of positivity to VDRL in 4 rubino-positive patients.
2. Absence of auto antibodies and HB antigens in all patients.
3. The electrophoretic profile remained normal in 22.86% of the patients. Increase in gammaglobulin fractions (62.86%) and alpha 1 (42.86%) were the alterations mostly frequently found. The electrophoresis is not related to the rubino reaction positivity or negativity.

Phagocytic function in Hansen's disease patients and its relation to chemotherapy  
— Fliess, E.L.

## IV Brazilian Hansen's Disease Congress

**WORKS PRESENTED IN POSTERS**

Coordinators: Joel Schwartz  
Milton Gorelik

**Use of life table to eliminate from the active record, Hansen's disease patients out of control and of unknown whereabouts: A eight year experience using this method**

— Ferreira, J; Casarin, A; Bernardi, C.D.V; Majajewski, H.O.

Three criteria for the withdrawal of Hansen's disease patients of unknown whereabouts from the active record are presented, based on patients' age, number of years they have been out of control and probability of their being alive, calculated according to a regional mortality table. In the first criterion, patients who have been lost and who according to their life table have a lower than 50% mathematical probability of being alive were given "statistical discharge". In the second and third criteria, Mitsuda-negative patients who had been lost for more than 20 years and Mitsuda — positive patients who had been lost for more than 10 years and who had not been included in the first criterion were given "statistical" discharge".

During the six years in which the method was used in the state of Rio Grande do Sul, Brazil, 506 patients of unknown whereabouts were withdrawn from the active record, four of whom were found to be alive with the disease in progress. The results that have been achieved suggest an accuracy rate of about 100% for the first criterion of "statistical discharge" and about 98% for the other two criteria.

**Professor Raul di Primo — a pioneer in Hansen's disease prophylaxis in Rio Grande do Sul**

— Gomes, A.C.B.

The activity developed by Prof. Raul di Primo, with a view to give assistance to Hansen's disease patients in the state of Rio Grande do Sul; his first initiatives; his reports on the first contacts with patients; the inauguration of the Emergency Hospital for Hansen's disease patients; the campaigns pro-institution of " Am-

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paro Santa Cruz" (for children of Hansen's disease patients) and of "Hospital Colônia Itapoã" and their respective inaugurations.

**Hansen's disease geographical distribution in Duque de Caxias —1978,1982**

— Oliveira, M.L.W; Dominot, LA; Ferreira, S.P.

Based on the addresses of patients recorded at Health Center of Duque de Caxias, their geographical distribution in the urban areas of towns tried to be determined in an attempt to demonstrate the existence of focuses. The universe studied consisted of the new cases recorded in the period comprised between January 1,1978 and June 30,1982.

**Hansen's disease control in a Health Integrated System**

— Berardi, C.D.V; Ferreira, J; Gerbase, A.C; Marques, E.P; Andrade, P.F.M.

The development of Hansen's disease programme in the present Health System of the state of Rio Grande do Sul is described: the programme is established in approximately 250 Sanitary Units of the "Secretaria da Saúde e do Meio Ambiente", covering the totality of the 244 cities of the state. From these units, 24 have a dermatology specialist and in the others, the patient is assisted by a generalist doctor. The schemes of regionalized supervision, the relations of the Hansen's disease programme with other institutions, with universities, social welfare organs, hospitals and private physicians are described. The difficulties for the programme development within this complex system are also described.

**Study of a patient with virchowian Hansen's disease and fungoid mycosis**

— Margarido, L.C; Almeida Neto, E; Barros, C; Marchese, A.J.T; Gal, P.

A study of a patient presenting virchowian Hansen's disease who, in the clinical evolution presented psoriasiform erythema-scaly cutaneous lesions, confirmed as fungoid Mycosis

by the clinical and laboratorial diagnosis is carried out.

Skin biopsy, ganglion anatopathologic study and immunologic evaluation have been made. The material originated from the cutaneous lesions, ganglion and peripheral blood biopsy have been used for tissue culture in an attempt to cultivate macrophags parasited by the *M. Hansenii* and for other investigations.

**Clinical, Cardilogic and ECG examination — comparative study among Hansen's disease patients and normal population, of the same age-group**

— Diniz, M.V; Margarido, LC; Marchese, AJ.T; Almeida Neto, E.

Cardiac alterations in patients with Hansen's disease are known and seem to be originated from a lesion of the autonomic cardio-regulating system. The correlation between the disautonomy mentioned and the Hansen's disease clinical form has been reported.

The present study is one contribution more to the cardiologic approach of Hansen's disease.

**Mycologic study in Hansen's disease patients in Hospital Padre Bento**

—Margarido, L.C; Salebian, A.

The authors made a survey of fungic and microbial infections in a group of patients presenting different forms of Hansen's disease. A direct mycologic examination, cleared by potash and culture of the material obtained in the affected areas has been made. A greater number of fungic infections was found in the interdigit region and nails in strict correlation with Hansen's disease sequela deformities. The frequency of different fungi in the group studied is also presented.

**Considerations on the frequency of livedo in healthy children, living with Hansen's disease patients**

—Novotny, MA; Neves, R.G; Queiroz, LC; Nascimento, V; Neves, S.A.

The authors examined 251 children living with Hansen's disease parents, dwelling in the area of "Sanatório Tavares de Macedo", in Niteroi, RJ, Brazil and observed a high incidence of livedo.

Clinical dermatologic-level considerations are made and a long-term study to explain the dermatosis pathogenesis and possible correlation with Hansen's disease is planned.

**Internation necessities in Hansen's disease and places available in Brazil**

— Margarido, LC; Almeida Neto, E; Marchese, AJ.T.

Hansen's disease patient can be led to hospital internation due to reactional, orthopedic, nephrologic and neurosurgical problems. Sanitary dermatology hospitals are being disactivated in a heterogeneous way, thus creating a shortage of places for the mentioned situations. On the other hand, the situation of general hospitals in the country is one of shortage in relation to the beds offered to the population. The general hospitals are expected to assist Hansen's disease patients although this is not possible for, besides the shortage mentioned, there are (apparent and non-apparent) prejudices which limit or, worse, restrain the access of these patients to general hospitals. Conclusion: the principles regulating the intended "disactivation" of Sanitary Dermatology Hospitals shall be reviewed.

**Study on the lymphocyte circulating population in Hansen's disease patients**

— Viana, S.M; Damasco, M.H.S; Junior, O.F.G; Gallo, M.EN; Almeida, S.M.R; Andrade, L.M.C.

A survey of the respective lymphocyte circulating population, with the objective of explaining the Hansen's disease patients immunologic state is proposed.

T, Ta and B-lymphocyte patients were studied in Hansen's disease patients distributed according to their clinical situation.

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##### **Laboratorial aspects of Hansen's disease patients contacts**

— Arruda, M.S.P; Astolfi, C.S; Constantino, K.R; Matos, M.T.T; Opromolla, D.V.A.

A total of 230 contacts of virchowian Hansen's disease patients were submitted to Mitsuda reaction, evaluations of the percentage of T lymphocytes and of the peripheral blood monocyte rate and to the Rubino reaction.

These individuals were divided into two groups. In group I (59 people) the components were relatives of virchowian patients while group II comprised 171 servants working for more than 1 year in Hospital Lauro de Souza Lima.

Analysing the data obtained, it can be evidenced that:

1) There is no relationship between the response presented to Mitsudine and the percentage of T lymphocytes or to the peripheral blood monocytes rate in contact individuals.

2) Fernandez reaction can be more frequently observed in individuals of group I than those of group U. The Mitsuda antigen provokes the positivation of Fernandez reaction in approximately 30% of the cases.

3) The percentage of Mitsuda-negative reactions (without induration) did not differ in both groups, although indurations smaller than 5 mm have been 10 times more frequent in individuals of group I. A second application of this antigen in some of these individuals showed Mitsuda positivation in all persons tested.

4) Except for one individual of group I, all other contacts were negative to Rubino reaction.

##### **The use of local resources in the prevention of physical incapacities in Hansen's disease — Report of activities developed in Sanitary Unit of Esteio-RS**

— Gomes, A.C.B; Boszard, L.

The authors describe their activities related to the prevention and recovery of physical incapacities in Hansen's disease patients registered in the Sanitary Unit of Esteio (SSMA/

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RS); footwear manufacture.

##### **Borderline — uncommon aspect Hansen's disease**

— Trindade Filho, J; Diniz, M; Nascimento, E.S; Neves, R.G; Quevedo, LP; Mendonça, A.MN; Estrella, R.R; Towersey, L.

The authors present cases of borderline Hansen's disease with uncommon aspects:

- exuberant hansenoms bursting out inside apparently healthy areas of the skin (foveolate areas).
- intra-lesional vasculitis lesions.
- plantar syphilitic lesions.

##### **Presentation of two cases of virchowian Hansen's disease in reaction and Ludo phenomenon**

— Seura, M.S; Viana, J.M.P; Gripp, A.C; Porto, J.A.

Two cases of virchowian Hansen's disease reaction and Ludo Phenomenon will be presented.

CASE 1: 25-year-old female patient with diagnosis of virchowian Hansen's disease in 1981. The patient was interned in July, 1982 with reactional presentation, presenting vasculitis and necrosis lesions in the face and left auricle of the ear.

CASE 2: 30-year-old male patient with diagnosis of virchowian Hansen's disease in July, 1982. He was interned with multiform erythema and erythema nodosum lesions which developed to vesicles, blisters ulcerations and necrosis.

##### **Ganglion Fistulization as a Hansen's disease reactional manifestation**

— Oliveira, M.L.W; Paes, M.B; Vieira, W; Marques, A.S.

A patiente with VH diagnosis who, in a 2-year treatment developed with exuberant reactional outbreaks, presenting polyadenopathy and multiform erythema. In one of these submandibular ganglions outbreaks, he presen-

ted confluence and fluctuation with expontaneous fistulization of axillary ganglions.

Considerations on the classification of reactional type and differential diagnosis with tuberculosis.

**Considerations on the evolution of a case of borderline Hansen's disease — Reversal Reaction**

— Oliveira, M.L.W; Azulay, R.D; Paes, M.D; Ishida, C.E.

The clinical and laboratorial follow-up of the evolution presentation of a female patient during 2 years and a half is presented.

13H was diagnosed in ganglions and kkin, in use of rifampicin and (or) lampren because of hypersensitivity to sulfone. The patient presents photosensitivity and clinical presentation simulating LES. He develops lesions of the tuberculoid type and Mitsuda positivation.

Comments on up-grading-kind reaction.

**The use of the computer in a data recording system**

— Ferreira, J; Bernardi, C.D.V; Gerbase, A.C; Souza, A.M.P.V; Melechi, L.H.

A seven-year experience using a "commercial" computer system for Hansen's disease patients recording in the state of Rio Grande do Sul is presented.

Through this system, names and other personal, clinical and laboratorial data of each patient, besides their contacts are recorded in the computer. The method allows, besides the inclusion of new cases, the alteration of the al-

IV Brazilian Hansen's Disease Congress ready existing records thus providing the maintenance of an up-to-date file of all patients and contacts.

Among the advantages presented by this system in relation to other methods, we can emphasize:

a) the possibility of immediate return of information through periodical sending of lists with up-to-date data of patients and contacts and tables with operational indicators to be used at local level and by the supervisors in programme administration.

b) greater easiness in carrying out epidemiological studies due to the possibility of emitting, at any moment, tables with several kinds of crossings necessary to the endemic disease evaluation.

**Alcohol-Acid-resistant Bacilli in the Culex fatigans**

— Bona, S.H; Silva, A.C.L; Costa, RJ; Fonseca, A.P.M.

The results of a research carried out to evaluate the degree of contamination of the insects mentioned in the residences of Hansen's disease bacillary patients were the following:

- a) all laminas examined had alcohol-acid-resistant rods
- b) several laminas were globy structure-like.
- c) positivity was present in salivary glands, intestine and ovarium of the insects examined.
- d) the morphology of the bacilli was variable: thin or thick bacilli, strongly acid-alcohol resistant, several of which fragmented and with granulation.