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GONORRHEA CONTROL PROBLEMS

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GONORRHEA CONTROL PROBLEMS

INTRODUCTION

In order to summarize in a small number of problems the highly varied and complex difficulties in the way of gonorrhoea control, I have considered it necessary to refer firstly to the principal characteristics of this disease in relation to the topic; secondly, to what may be considered essential requirements in a gonorrhoea control program; and thirdly, to present the problems in a group which I believe contains the most relevant aspects to be noted.

PRINCIPAL CHARACTERISTICS OF THE DISEASE IN RELATION TO ITS CONTROL

Gonorrhoea is the most prevalent of the venereal diseases and one of the most common bacterial infections in adolescents and adults, occupying, together with syphilis, a very prominent place among the ten chief causes of morbidity. A pronounced upward trend is evident from the statistics available from those countries which maintain reliable records, while these statistics also show the growing divergence between the curves representing the incidence of syphilis and gonorrhoea, indicating the greater rise in the latter.

It only attacks humans and is transmitted practically exclusively by sexual contact; it is a prevalent infection among promiscuous persons. It occurs with the greatest frequency in the big cities,¹ where a multiplicity of factors combine to reduce stable sexual relationships; this is the reason why statistics on a national scale provide an incomplete and far from representative picture of the position in the different regions of a country, in that they reflect primarily the situation in the larger population centers.

There is no natural immunity to the disease, neither do previous attacks confer any such immunity, and all persons harboring *Neisseria gonorrhoeae* in the genital tract or the anorectal canal are contagious, whether they are themselves symptomatic or asymptomatic. The short incubation period means that very soon after exposure, usually three days, there are more persons carrying the disease, and so on; in fact, it could be stated that the spread of gonorrhoea is by geometrical progression, compared with that of syphilis, which is by arithmetical progression.

Gonorrhoea is produced by *Neisseria gonorrhoeae*, a microorganism which has recently been cultivated in special media and occurs in four morphologically distinct clonal types, only two of which have been found to be virulent.²¹

In practice, Gram's method is the one recommended for investigating the gonococcus in male cases with acute gonorrhoea,^{5,6} since it gives satisfactory results in the great majority of cases. It is not successful with infected women, for whom the culture method has to be used. Since the standard cultures do not reveal the gonococcus in a large percentage of the women harboring it, even when carried out under ideal conditions,⁷ it is essential to use a special selective antibiotic medium - fortunately developed a few years ago by Thayer and Martin - which is the one advised at present.

It is the only one in which the pathogenic Neisserias - Neisseria gonorrhoeae and Neisseria meningitidis - will grow and which can be used to eliminate the saprophytes and bacterial microorganisms that contaminate specimens taken from the vagina, cervix, and rectum,^{6,8,10} which are the most suitable for bacterioscopic purposes. Culture in this medium permits presumptive diagnosis of gonorrhoea, when colonies of a typical morphology develop, which are in addition positive to oxidase and made up of Gram-negative intracellular Neisserias.^{4,5} This diagnosis is virtually equivalent to the definitive one, which requires the sugar fermentation test. Moreover, the technique of cultivation in a selective antibiotic medium does not need highly trained personnel, costly equipment, or special installations, and can be applied at relatively low cost.

Gonorrhoea produces acute symptomatic urethritis in men that is easy to diagnose, and at times rectitis that is often asymptomatic. On the other hand, the asymptomatic form is the most usual in women,^{1,3,4} profuse leucorrhoea being infrequently of gonococcal origin; diagnosis must accordingly be based on bacteriological evidence and a history of sexual contact with an infected man.⁴

Some points regarding the treatments which are at present the chief means of control for gonococcal infections should be mentioned. The most important appear to be, on the one hand, epidemiological treatments, and on the other, those utilizing the drugs at present recommended.

Epidemiological treatments. Since the usual state of infected women is asymptomatic, treatment based solely on epidemiological data applied, for example, to a woman who has had recent sexual contact with a man suffering from urogenital gonorrhoea is amply justified, owing to the practical difficulties of obtaining bacteriological proof of the presence of the disease coupled with the need to eliminate sources of infection as quickly as possible.¹

Preferred drugs. Numerous researchers in various countries have isolated, both in vivo and in vitro, strains of *Neisseria gonorrhoeae* with increased resistance to penicillin and other antibiotics,^{4,6,8,11,13} a circumstance which has resulted in a higher treatment failure rate when these drugs were applied in doses that had previously been effective. In the same way, it has been shown that the resistance to penicillin is relative and not absolute, so that it continues to be the preferred drug,^{13,15} provided it is used in optimum dosages, since otherwise the continuation of foci of infection will be favored and there will be a risk of new strains of the gonococcus developing that are less susceptible to penicillin. In this respect, penicillin preparations with long-lasting effect, such as procaine with aluminum monostearate and benzathine, which had proved their effectiveness in the treatment of gonorrhea in the past, are today the ones which are being chiefly blamed for the disease's reduced susceptibility to penicillin. The reason for this is that they produce prolonged penicillin levels in the blood which are below the minimum concentrations lethal to certain strains of the gonococcus, with the result that only those most sensitive to the drug are killed while the more highly resistant ones survive.⁸ In this connection, reports have been received from various places of men with the most highly resistant gonococcal infections who had been infected by prostitutes who were periodically injected with long-acting penicillin to prevent venereal diseases. Prophylactic treatments of this type for prostitutes, which appear to be effective in preventing syphilis, are not advisable as far as gonorrhea is concerned⁴, since they favor the development of gonococcus strains with higher penicillin resistance, and may also change a symptomatic infection into an asymptomatic one without making it less communicable. At the present time, therefore, penicillins with short-term action, i.e., those which produce higher concentrations in the blood, are the ones which ought to be used, rather than the long-acting types,⁵ but always bearing in mind the drawbacks involved in applying smaller doses than those recommended.

CONTROL PROGRAMS

The control programs for venereal diseases, which include that for gonorrhea, comprise a series of activities intended basically to break the chains of transmission and eliminate the sources of infection - i.e., to prevent the appearance of new cases and to cure existing ones. However, as only a proportion of those infected see a doctor of their own accord (either at his private practice or at clinics and similar institutions), those who do not come for treatment have to be sought out.

The directors of public health services, taking care not to lose sight of the primary objectives they pursue and using the information to hand on the magnitude of the problem and the resources available, draw up the control program and the plans to be executed involving the sum total of the efforts of the various civil, military and social security institutions providing medical services, the work of medical professionals, particularly private doctors, key persons in communities, and the public in general.

Main activities. The basic activities, which are closely interconnected, are directed toward the treatment and the detection of cases.

Those concerning treatment have as their principal purposes: a) the encouraging of infected persons to report to doctors of their own accord, by means of appropriate health education and the improvement of the care provided by the medical services concerned; and b) the obtaining of the active and effective participation of private medical practitioners.

1. Promotion of treatment on patient's initiative

The proportion of infected persons who seek medical care of their own accord should be increased in order to reduce the number that have to be sought out - relatively far more for gonorrhoea than for syphilis. The reasons for this will be explained when analyzing the importance of case detection. This is why particular attention is paid in the control programs to the provision of information on venereal diseases as part of health education, and why the public health services and, insofar as they can, private consultants, provide suitable medical care, i.e., accessible and acceptable as regards both diagnosis and treatment, to persons requesting it.

a) Educational work. Its importance. Information work concerning venereal diseases in the community, and particularly among the most exposed groups, is highly important for encouraging infected persons to come forward of their own initiative, in that it promotes personal and collective attitudes favorable to the prompt seeking of medical assistance. Whether many of the persons exposed to the risk of infection actually become infected, and if so, whether they avoid infecting others and go promptly and of their own accord to a doctor for diagnosis and treatment until fully cured, will depend on the degree of health education achieved in the community as regards venereal diseases. Of course, these results are subject to the emphasis which is placed on information on matters such as how the diseases in question are caught, how they show up and how they are transmitted; its importance for the individual, the family and society as a whole, and what should be done at the least suspicion of infection. The defense against venereal diseases lies in persons, and all the types of prevention to avoid infection or its complications depend in the last analysis on the decision of the individuals concerned. Their understanding of the disease and the suitability of the medical services available will be of considerable influence in such decisions.¹⁶ However, such health education has a major limitation as regards gonorrhoea, and this limitation applies to the very group which makes up the largest reservoir of sources of infection, i.e., the numerous asymptomatic women who cannot be expected to seek treatment since they lack the stimulus of symptoms.

Education and information for persons suffering from gonorrhoea may be provided by the doctor during consultation and oriented mainly toward preventing reinfection or the infecting of others, and also toward obtaining

the patients' cooperation in the tracing of his contacts. The impact which a doctor's advice has makes it indubitably the best opportunity for instructing those concerned in the basic facts of the matter. Education for the most exposed groups of the population can be provided under the general programs carried out by the responsible personnel. The sex education of adolescents and young adults, which is admitted to be of great value in the control of venereal diseases, should be carried out with the participation of the family, the school and community organizations.

Education and information work therefore not only help but are in fact of fundamental importance for making possible the treatment of infected persons, the central objective of the activities of control programs.

b) Effective and acceptable venereal disease services. Their importance.

Neither a favorable attitude on the part of those infected, nor sometimes even their decision to seek medical attention, are sufficient if the care and treatment available do not combine the necessary conditions to be acceptable, while the services involved should also possess the minimum resources necessary for them to provide the greatest certainty as regards precise diagnoses and correct treatment. There can be no doubt that venereal disease services which do not show proper tact and respect for the modesty personality and most cherished interests of those with whom they deal only drive them away from treatment. As examples of tactlessness and lack of discretion we would quote services which are used both for individual patients and for group medical examinations for prostitutes. Apart from this, on many occasions diagnosis and treatment are based exclusively on clinical findings, without the normally indispensable bacteriological confirmation being obtained, either because no laboratory services are available or else because those on hand are inadequate, so that the doctor cannot be absolutely certain that he is applying the correct treatment, with all its consequences. This indicates that the services concerned should not only meet the requirements mentioned but should also have the trained personnel and the facilities for identifying *Neisseria gonorrhoeae*, by means of the appropriate culture techniques, together with adequate supplies of drugs approved for venereal disease treatment by the health authorities.

c) Effective participations by private medical practitioners. Its importance. Despite all the value of having infected persons seek medical care, it will not contribute much to the control of gonorrhoea if the doctors concerned do not fully play their part in each and every case, their particular role being viewed as comprising an "indivisible whole" made up of: establishing correct diagnoses based on clinical and laboratory findings; starting treatments which utilize the best drugs in the optimum doses; investigating contacts for the detection and treatment of new cases, including epidemiological treatment; instructing the patient on how to avoid both reinfection and infecting others; and reporting the case to the appropriate health authorities.

It is estimated that in many countries private practitioners treat the majority of venereal infections, even in the cities where the sale of antibiotics without prescriptions and treatments by pharmacists are commonplace. For this reason, the cooperation of the private practitioner is basic in all the activities carried out under a gonorrhoea control program, since without it no institution or group of institutions, however well organized or equipped, can hope to operate such a program successfully.

The participation - correct or erroneous, complete or insufficient - of private practitioners in the handling of their gonorrhoea cases depends, besides on their basic professional training, on their actual knowledge of the subject, on whether they have available reliable laboratory services for the identification of the gonococcus, and on the other factors necessary for the full accomplishment of their task, and also, finally, on the extent to which they consider themselves important partners in the control programs. Information on medical advances in this field, and the arousing of the practitioners' awareness of their importance, are of course responsibilities of the directors of public health.

There are three main means which have proved effective in obtaining the practitioners' valuable cooperation: offering them opportunities to bring their knowledge of venereal disease diagnosis and treatment up to date, providing them with facilities for the handling of their cases, and supporting them to the maximum extent possible, in the supplying of information they wish to make known, either to professional groups or to the population as a whole. Fortunately, doctors individually and collectively readily accept specific information regarding recent advances in venereology, which includes data on the size of the venereal disease problem on both the local and the national scale, on control programs and activities being carried out, the results obtained, and the form in which their cooperation is most effective. As regards assistance in the solving of their venereal disease problems, laboratory and advisory services for diagnosis and treatment, under a system which does not place either their reputations or their financial interests at risk, are of particular value to them.

2. Detection of cases. Its importance

However many infected persons are led to seek treatment by means of health education and the facilities offered, there is always a large group who do not, and these are the very ones who have to be sought out since it is they who are the most dangerous in spreading the disease because they continue to pass it on while very often being unaware that they are themselves infected. Consequently, the seeking out of unwitting cases and ones unknown to the medical authorities is one of the most important stages in control programs.

Various circumstances combine to make it infected women who constitute the greater proportion of the persons who do not seek treatment. To begin with, since the disease generally occurs in them in its asymptomatic form, they are virtually unaware that there is anything amiss, except for those who notice a vaginal discharge of gonococcal origin and do not know the reason for it. In addition, modesty, shame and fear of what may happen if other persons learn of their trouble, also cause women to be less likely to request medical care. There are therefore good reasons why the number of cases to be sought out includes more women than men, while the statistical data available confirm this since they show a larger number of men with the disease than women, which seems out of line with reality in view of the way in which it is communicated.

The infectiousness of women with the asymptomatic form of the disease has been demonstrated experimentally in a conclusive fashion¹⁷ and the problem presented by asymptomatic infected persons is complicated by the fact that men have also been found harboring gonococci in the urinogenital tract without showing clinical evidence of the disease; the epidemiological importance of this is under study.

The fact that so very many female cases are both asymptomatic and infectious is a major difficulty for the control of gonorrhoea, because the bacteriological means for diagnosing it are neither quick, simple nor absolutely certain, while there is no specific serological reaction; hence the position is different from that with syphilis, where identification of the treponema is straightforward and immediate, a large percentage of infected persons are asymptomatic but not infectious, and there are specific serological reactions for detecting them.

The following procedures are the only ones that can be applied for case detection at present: venereal disease education stressing each and every one of the activities and measures against the disease; study of both the sexual contacts admitted by the patient and the persons in his social circle whom he considers would benefit from a medical examination, and for the latter purpose, the seeking out of cases in selected groups of the population in areas where there is a high incidence of the disease.

a) Investigation of contacts

A serious matter in the control of gonorrhoea is that the investigation of contacts has many more limitations than is the case with syphilis, without it having been possible to develop other epidemiological methods which would be effective in checking the speed with which the disease spreads. 1'11'13

This method, which does not give very satisfactory results with gonorrhoea anyway, is practically or entirely valueless when used with promiscuous infected women, particularly prostitutes, who are virtually unable to provide information that can be used to identify and locate their contacts. The difficulties of this epidemiological investigation are increased by the tremendous number of persons with gonorrhoea who have to be seen: four or more times the number with infectious syphilis. This means that the number of visits to be made and the physical examinations to be carried out is such that with the present vast number of cases the public health services just cannot cope with them in addition to those required for infectious syphilis, which is considered to have the greater priority. However, in the working conditions which obtain in the greater majority of venereal disease services, this investigation can be done through the actual patients, with their cooperation, with the assistance of the available field personnel.

The best way of carrying it out is to use only personnel who have been properly trained and who are employed full-time, and if this is not possible, official medical and paramedical personnel, with informal training, can do the job with the obvious limitations, if there are no specially trained investigators or their assistants. In such cases, they obtain from patients the necessary information on their contacts together with directions on how best to locate them, and arrangements are then made for these to be medically examined by district nurses or social workers, who do this as part of their ordinary work. To facilitate this work and make it quicker, some services use the patients themselves to help in tracing their contacts, when they know them well and are prepared to cooperate. This system is made more effective if the patients are given cards which their contacts can hand in to the health services they choose, or to a private practitioner who knows the key and can give the appropriate examination.

b) Case-finding

The detection of cases by means of seeking them out at clinics located in areas with a high incidence of venereal disease is carried out among the adolescents or young adults who attend these clinics. In this respect, study of the occurrence of asymptomatic gonorrhoea in certain groups which are most exposed to venereal risks has shown that the greatest number of cases is found, in descending order of frequency, in: women who have been in contact with known cases; women who enter prisons; men who attend venereal disease clinics for reasons other than gonorrhoea; and finally, women who attend obstetrical clinics. In this way it has been observed that proportionally more cases of asymptomatic gonococcal infection are found among women than men in similar groups. Under these circumstances, it is advisable that cases should be sought in prenatal gynecological, early cancer detection and family planning clinics; and also by prison medical services and venereal disease clinics.

3) Treatment of cases and contacts. Its importance

The treatment of cases and their contacts is one of the fundamental activities in the control of gonococcal infections, since it leads to the prevention of new cases and the curing of existing ones.

It is apparent that the difficulties of treating gonorrhoea have been steadily increasing. A growing number of failures have been reported from all quarters, due, mainly, to the circulation of gonococcus strains which have become less susceptible to drugs which used to be effective, so that doses have to be increased to eliminate them.

It is important that doctors should be kept up to date as regards treatment, so that they may apply it in the correct form. For example, they should be informed that it has been demonstrated that the resistance to penicillin shown by numerous gonococcus strains is relative and not absolute,¹⁵ and that penicillin is still the preferred drug provided it is given in appropriate doses, i.e., doses large enough to produce sufficiently high blood concentrations to exterminate the more resistant strains, since when it is administered in doses below the optimum it may favor the appearance of strains resistant to the drug, lead to more treatment failures and the loss of opportunities to eliminate sources of infection. Thus, it is important that doctors should know that at present penicillin should be used except in cases of intolerance of this drug. In other words, doctors should be made to understand that to select the drug and the dose they should use in treating gonorrhoea, they should utilize the information provided by the public health organizations, who can tell them which ones have been clearly shown to be the most effective.

The limitations of gonorrhoea control activities and the adverse effects of very many factors regarding the spread of the disease will be evident. However, there are various possible ways of increasing the most effective means employed at the prevention of cases and treatment of sources of infection by making better use of the resources available and those which may be added to them. Important advances have already been made in the methods used to identify the gonococcus and for transferring specimens to central laboratories so that the microorganism will survive until it can be cultivated; a lot more has also been learned about *Neisseria gonorrhoeae* and the disease. As an example of the former may be cited the discovery already referred to of the four morphologically distinct clonal types,^{15,22} only two of which are virulent, which has provided a solid base that is being used for valuable

research on new techniques and methods to enable the better utilization of the resources available for scientific research, and to speed up the development of new means of combating the disease, or for the strengthening or supplementing of those already available. An example of the progress made in understanding the disease is provided by the recent transmission of gonorrhoea to five chimpanzees - for the first time in the history of medicine - at the U. S. Public Health Services's Venereal Disease Research Laboratory at Atlanta, Georgia, and the essentially practical studies that are being continued concerning these cases, on the course followed by the infection, the production of antibodies, possible clonal changes in the gonococcus, tissue changes in the urinogenital region, etc., are opening up new prospects; the same may also be said of experiments now being carried out with other species of animals and regarding the obtaining of a specific serological test and a reliable vaccine.

There is renewed interest in the development or perfecting of bacteriological methods and means of transporting specimens, antigens for cutaneous tests, better drugs proven by the responses of virulent strains of the gonococcus to different drugs and dosages, and of course for obtaining an immunizing agent which will provide specific protection, together with reliable serological reactions for detecting asymptomatic cases.

While these hopes are being materialized, the steps which may be taken in the present situation are numerous and highly promising; for example:

a) If ignorance of the nature of the disease means that many people become infected, fail to seek treatment and continue to act as foci of infection, it is logical to intensify the educational work among the population, with special emphasis on the groups which are the most exposed.

b) If because of insufficient active and effective participation by private practitioners numerous opportunities to make correct diagnoses and prescribe the right treatment are missed, contacts are not investigated and epidemiological treatments not applied, health education is not given to patients and the reporting of cases is not improved, then every possible effort must be made to keep the doctors' knowledge of venereal disease treatment up to date and to involve them in the control program so that they may become active allies in a joint effort, to which should be added that of the pharmacists in those places where their cooperation is considered desirable.

c) If because of a lack of proper tact and discretion during consultations some infected persons fail to seek treatment, it is altogether reasonable that steps should be taken to remove these real obstacles, which otherwise tend to nullify the most important activity in control.

d) If the shortage of venereal disease services is such that there are infected persons without access to medical care, as a first step full use should be made of the laboratory systems and medical services provided by the

public health authorities, which implies, on the one hand, that laboratories should be equipped - at least in the major cities - to identify the gonococcus by cultivation in selective antibiotic media, and to offer this service to private practitioners; and on the other, that no person suffering from gonorrhoea who reports to a public medical service should fail to receive immediate, adequate and free treatment.

e) If through inadequate investigation of contacts many of them are not located and examined, it is advisable to seek the cooperation of the patients by means of appropriate health education given by the physician during consultation; in order to have the patients help with this important work.

f) If, as commonly occurs in places where there are controlled systems of prostitution, large numbers of men are infected by women who are subject to regular medical examinations, treated when deemed infected, and occasionally given prophylactic treatments almost always comprising long-acting penicillin preparations, it is common sense to ensure that the men who use these prostitutes should be made clearly aware of the undeniably false security which these women offer as regards the risk of infection.

g) If the shortcomings in the gonorrhoea control system are largely due to inconsistencies in the implementation of activities considered basic, it is essential that these should be strengthened and integrated with the general working programs, above all in the major cities where the need is greatest.

h) If the growing scale of international movements of population contributes to the increase in gonococcal infections, it is a duty of the American nations involved to join forces under the auspices of the Pan American Sanitary Bureau in order to establish or strengthen measures to reverse this trend, and particularly to speed up the standardization of norms and basic procedures, including the regularity and promptness of the exchange of epidemiological information regarding cases and contacts; to intensify gonorrhoea control and venereal disease programs; to pursue epidemiological investigations in the field, seeking to develop better means of locating gonorrhoea in the community; to make it possible for physicians, both in their private and their institutional practices, to base their clinical diagnoses on data furnished by public health laboratories, and to participate in determining the susceptibility of circulating gonococcus strains to various drugs, especially penicillin and tetracycline, with the international reference laboratories. In addition, the integration of the venereal disease services of the two countries concerned in adjacent regions, as done by the U. S.-Mexico Border Public Health Association in recent years, has demonstrated its value in the increasing of local venereal disease programs in various border region cities. At the periodical meetings of these "Binational Local Health Councils", as they are known, the persons concerned with venereal diseases have been able to exchange valuable information on the size and development of the problem in

their particular region and the successes and failures of the program, and to contribute ideas and experience, all of which has led to mutual assistance in improving the reporting of cases and contacts, in giving epidemiological investigation impetus, in health education, and in the better reciprocal utilization of laboratory resources. The foregoing naturally helps to foster friendship, understanding, cooperation and solidarity between the countries concerned.

GONORRHEA CONTROL PROBLEMS

The problems at present in the way of gonorrhoea control are highly complex and varied and are also closely interrelated. This being the case, they are presented here in a form which is considered to summarize the most important aspects, without the order of their presentation implying any specific order of importance.

PROBLEM No. 1. The number of persons suffering from gonorrhoea is very large and the disease is continuing to spread most rapidly, a state of affairs that is favored by very varied factors.

In fact, the greater prevalence of gonorrhoea among venereal diseases - which rank among the ten chief causes of morbidity - and the upward trend of its curve compared with syphilis in different countries, are underscored by the multiplicity of cases and the speed with which the disease spreads.

Its rapid spread is favored by the combination of a large number of persons with infectious forms of the disease and large numbers of susceptible persons in every community of any size, and also by many other circumstances deriving mainly from the natural history of the disease, human behavior, and economic and social development.

Besides the short incubation period, which helps the rapid multiplication of cases, the following points are also worthy of mention: a) The possibility that the "transmission - exposure" index may be very high, since during the sexual act the gonococci are located directly in some of the ideal sites for them to survive and multiply, i.e., the urethra of the man, the cervix of the woman, and the rectum in both; b) The rise in extramarital sexual contacts resulting from the relaxation of traditional morality in certain social groups in various countries, together with the fact that adolescents and young adults are able to get together easier today; c) The incentive created by the growing use of contraceptives,^{10,19} which are falsely believed to provide safety from infection, as is the case with prostitutes who operate with written or verbal medical authorization.

Other factors favoring the increase of the disease are: the asymptomatic state of the majority of infected women, who remain untreated because they are unaware of their condition; the permanence of infection foci owing

to treatment failures and apparent cures, and, finally, the growing mobility of certain population groups, and the accumulation of population around the big towns in economically and socially depressed areas.¹⁹

PROBLEM No. 2. For the moment, gonorrhoea control consists basically in treatment to cure and prevent infection; however, in practice it is highly difficult to detect infected persons and hence to cure a sufficient number of cases and contacts to check the rapidity of the disease's spread.

The difficulties in seeking out those who do not come for treatment of their own accord derive primarily from the inadequacy of the procedures used for this purpose, the incomplete understanding of when, where and under what circumstances cases occur, and the lack of funds for this work. As regards gonorrhoea this inability to track down and bring to treatment those who do not come of their own accord is a serious matter, because practically all such persons will be sources of infection who will continue spreading the disease; however, the situation is aggravated by the fact that asymptomatic women predominate among the undetected cases. Education concerning venereal disease has little effect in encouraging these women to seek treatment, while the investigation of contacts on the basis of known male patients - which has to be done quickly if it is to be of any use - is generally beyond the capabilities of the public health services in view of the large number of patients involved. In addition, these cases can only be diagnosed by the identification of *Neisseria gonorrhoeae* by means of cultivation in selective antibiotic media, and this technique - which is at present practically the only one advisable and feasible - is not yet applied in the majority of the laboratories used for venereal disease work.

PROBLEM No. 3. Very many opportunities to establish correct diagnoses and treatments in cases and contacts are being missed, as are opportunities to educate patients concerning venereal diseases, to investigate contacts and to obtain case reports, through inadequate participation by private practitioners, who are estimated to attend to the majority of cases.

In this respect, it has been pointed out how frequently private practitioners treat men with urethritis and women with vaginal discharges without having the laboratory tests done which are indispensable for confirmation of the etiological diagnosis and cure; and that the antibiotics which they select and the dosages they prescribe are not always the most appropriate ones; that they play a very small part in the investigation of contacts and the application of epidemiological treatments, and that as regards records and reports their statistics are very scanty or nonexistent, while many professionals do not report their cases or only some of them.²⁰ Now the effective cooperation of the doctors in the proper completion of their responsibilities depends principally on the updating of their knowledge on the subject, on them having reliable laboratory services available that can determine the presence or absence of the gonococcus by the most certain techniques, and on

them feeling that they are real partners in the control work. As regards the etiological diagnosis of the disease, the serious limitations of a practical nature for this in the majority of places, even the big cities, means that diagnosis is frequently based solely on clinical data and that cures following treatment are determined in the same way. It is obvious that the active and effective cooperation of private practitioners depends to a large extent on the efforts made to achieve it.

PROBLEM No. 4. There is a need for practical instruments for the prevention of infections; for the prompt and certain etiological diagnosis of cases, and for large-scale examination of selected population groups; i.e., a vaccine for specific protection is needed, together with easier laboratory methods for the immediate and precise identification of the gonococcus and a serological test specifically for the detection of infected persons.

The lack of an immunizing agent means that the prevention of new cases has to be made subject, basically, to the conduct of persons likely to be exposed, a factor which has not so far had any significant effect in preventing infection and reinfection in persons from different social, economic and cultural strata; and also to the rapidity with which sources of infection in the community are eliminated by treatment, which is not yet available in an acceptable form either. It will in any case be obvious that it is impossible to eliminate infectious diseases by means of drugs alone,^{11,13} however effective they may be; this is particularly true in the case of a disease such as gonorrhoea, in view of the manner in which it is transmitted, its highly contagious nature and the speed with which it spreads. Vaccination, together with specific treatment, would supplement the basic methods for handling these communicable diseases and would open up new prospects for an adequate control program.

The lack of appropriate techniques for determining *Neisseria gonorrhoeae* with the ease and speed required in practice - the only way of establishing correct diagnoses and effective cures - removes the certainty which is essential both for the treatment of those who need it and for the investigation of the contacts of persons who are indisputably infected. Finally, the lack of a specific serological test, which would help to overcome the present obstacles to controlling the infection, becomes all the more serious if it is borne in mind that the vast reservoir of sources of infection is made up of asymptomatic women who cannot be detected by the present measures and who cannot be expected to seek medical treatment without the incentive of symptoms.

PROBLEM No. 5. Gonorrhoea control is assigned a very secondary place in venereal disease programs, even in big cities where the disease is a major public health problem.

The activities carried out to interrupt the chain of transmission and to cut down the sources of infection are in fact incomplete and inadequate, at times symbolic only and occasionally erroneous, as is the case with periodical medical examinations of prostitutes, with or without the application of prophylactic treatments, which in such cases are not only valueless but even harmful for a number of reasons as preventive measures. In addition, the inadequate attention paid to the control of the disease means that very many public health laboratories in important cities are not equipped to identify the gonococcus by the most certain laboratory methods today available, or to offer this service to doctors so that they may confirm bacteriologically their diagnoses of gonorrhoea and the cures effected by treatment, although it is vital that such confirmation should be obtained.⁴

The seriousness of the problems affecting gonorrhoea control at present and the undeniable fact of its recrudescence are factors to be reckoned with; the advances achieved with laboratory methods for identifying the gonococcus and penicillin's continuing effectiveness in treating the disease do not permit us to accept the pessimistic view that new drugs and methods are needed to cope with the situation, and oblige us to review what we are doing, to assess the results obtained, weight up the main obstacles to control, review the resources available and assess their limitations and possibilities, compare experience and, on the basis of all these considerations, to draw up better plans for imparting fresh momentum to the battle against this disease. It was somebody in this great country who said that just the fact of setting up an enterprise meant that it was already a considerable way toward realization. The campaign to control gonorrhoea must be started up afresh, with new and greater enthusiasm, better organization, and all the national and international resources which it is desirable to combine. The growing consensus that gonococcal infections must be overcome; the efforts that the Pan American Health Organization is making to bring this point home in the Americas, and the results which may be expected from these "Technical Discussions on Venereal Diseases as a National and International Problem" are clear signs that this new undertaking has already been set in motion.

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