

EDITORIAL

Urolithiasis – Present State and Outlook

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Despite worldwide and sustained efforts in stone research, numerous questions concerning epidemiology, pathophysiology, diagnosis, therapy and prophylaxis remain unresolved. It is not possible even for specialised research groups to investigate all of the problems presented by this multifactorial disorder. It is important that there is a continuous exchange of experience in order to stimulate each other and, equally important, to avoid expensive parallel investigations. For these reasons, this first special issue on urolithiasis is presented and it is hoped that there will be successors in the forthcoming years. This issue aims to indicate "who is who" in the field of stone research and to guide future directions of investigation.

Because of the continuing worldwide increase of stone disease, especially in industrialised countries, there is little doubt that much greater attention should be devoted to morbidity figures. It must be emphasized that reports on stone incidence should not be based by the fortuitousness of hospital statistics but reflect realistically stone frequency in unselected populations (field study-like trials). It is of interest in this context that Hedenberg (Sweden, 1) showed that only 23 per cent of stone formers from a given geographic region had been admitted to a hospital. This supports the assumption that a majority of the stone patients had been treated on an outpatient basis, thereby escaping statistics of the pertinent regional hospital. In contrast, Ljunghall and Hetstrand (Sweden, 3), when recording 2322 males between 49 and 50 years, found that 13.7 per cent of them experienced episodes and symptoms of stone disease in earlier years. A similar percentage was reported by Larsen and Philip (Denmark, 2) and by Westlund (Norway, 1), noting also that the frequency of stone disease in females was around half of that in males (7 per cent).

These figures, should they prove valid for other highly industrialized countries as well, would justify efforts to set up screening procedures directed toward the evaluation of crystalluria thereby unmasking individuals with a high risk of stone formation.

The high frequency of urolithiasis also demands further investigation of problems such as how to assist the passage of stones by drugs and how to remove them by aid of instruments or surgery. New insights into urodynamics and into the mode of action of new drugs for the expulsion of stones should become more widely known and also the improvements of instruments (loop techniques, ultrasonics etc.). Progress has been made in stone surgery with the techniques of coagulum pyelolithotomy, partial nephrectomy. In situ hypothermic perfusion should be widely taught and become routine practice. This seems especially important since there is evidence that in conjunction with prophylaxis by drugs, those techniques undoubtedly make prevention of stone recurrence more secure.

As regards stone dissolution and effective prophylaxis, progress can be expected from standardising and optimising techniques for analysing stones and by elucidating the factors in stone pathogenesis. This in turn should yield a more profound basis for adequate treatment than current knowledge allows. When speaking on causal factors of stone disease there is in my own experience a markedly high percentage (50 - 60) of disturbances in normal urine flow characteristics, which should be carefully evaluated as a criterion possibly contributing to initiation of the nucleation processes. Here we should note minor degrees of stenosis or impressions on the urogram which may indicate abnormalities due not only to malformations created by blood vessels, but also urete-

rocoeles, reflux sequelae, and subvesical obstruction.

No less important are investigations on the causes of changes in urinary pH, by itself favouring nucleation, and on the nature and properties of stone inhibitors in urine. Most evident to me, is the growing interest among researchers in the nature and amount of foods ingested which in my opinion play a major role in the stone formation process and potentially also in terms of the kind of therapy for prophylaxis in an individual patient. We are convinced from those factors which have been documented and by our own investigations during a 10-day standard dietary regimen, that urine excretion of lithogenic materials unequivocally decreases with reduced food intake, even in individuals without previous symptoms of obesity.

Research such as this as well as various loading tests seem to me most important and highly promising for the future. They may also stimulate experiments directed toward stone dissolution and improvement of prophylaxis, and incidentally may lead to reduction of drug doses or allowing us to leave patients off drugs. Such efforts may be not only highly desirable but obligatory to us, when considering the fact that there is hardly a drug without unpleasant side effects, and that stone prophylaxis requires a long-term medical management.

Presently there are many problems in this field but fortunately they are counterbalanced by a vast number of research activities, as reflected

in part by the articles in this issue. Intense effort, fruitful communication and cooperation, which has become more evident in the last few years, will help to master step by step the yet unsolved problems of urolithiasis, all on behalf of the welfare of our patients.

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