Chapter 10

Valorization
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The collection of manuscripts included in this thesis highlights the high prevalence of protein-energy wasting in patients on hemodialysis and its relationship with mortality. Additionally, the dynamics of the development of malnutrition during the first 30 months on dialysis treatment were clarified. Therefore, the problem of malnutrition is clear and it is likely to be at least partially responsible for the high risk of clinical complications during the follow-up, associated with a significant component of the total cost burden of the disease due to hospitalization costs.

However, in front of a clear need to improve the nutritional therapy of patients on hemodialysis, as recently stressed by Hand et al\(^1\), in US a dietician has to follow about 150 patients and the focus is mainly on mineral and bone disorder. Dieticians spend more checking phosphate intake and compliance to phosphate binders. It is not the aim of this chapter to judge the importance of this specific complication, but the evidence that today in US the yearly pharmaceutical budget spent for mineral and bone disorder is about 30-fold higher than that of parenteral nutrition is impressive\(^2\). In absence of clear data, the general opinion is that the US situation is common with many other countries.

Protein-energy wasting should be prevented, or at least detected and also followed-up after start of renal replacement therapy in a very early phase according to a judicious choice of methods discussed in this thesis, in combination with a serious nutrient intake assessment and consequent dietary advice. However, it is well known that the change of the nutritional habits is one of the hardest tasks, and requires competence, dedication and time of experience dieticians, nephrologists and dialysis
nurses. Patients have to be strictly followed-up, educated on the benefit of maintaining proper dietary standards. It is a matter of fact that patients starting dialysis after a pre-dialysis phase on low protein diet do not present major nutritional problems and are likely more compliant to dietary advices\(^3\). Patient empowerment is clearly a strong tool in the hands of nephrologists to improve the outcome of patients on dialysis, and it is expected to be very cost-effective. However, it is clear that the very limited resources in term of available dieticians will not allow an efficient realization of this strategy. But whereas in US and other countries (e.g. France, Portugal, UK) the discussion is on the limited number of renal dieticians available, at least they are mandatory members of the team taking care of dialysis patients. In other countries their presence is even considered as optional and close collaboration between dialysis and dietetic staffs remains essential to handle this challenge. Web based educational tools may become in future effective approaches, but the current generation of patients will hardly benefit.

The uncover of a progressive protein-energy wasting disease should also trigger the search for hidden foci of infection/inflammation, facilitating the earlier reclaim.

Since nutritional therapy is so important in the follow-up of renal patients before and after the initiation of renal replacement therapy, it should be an important component of the education of nephrologists, so improving the communication with renal dieticians. Quality indicators related to the regular and frequent performance of nutritional assessment and of the obtained results in term of corrected nutritional habits should be part of the follow-up of dialysis patients. Likely, this should be the next logic development as the system of reimbursement for the treatment of dialysis patients is moving to total capitation\(^4\), in future including also cost of hospitalization. If it is true that nutritional secondary prevention is cost effective in avoiding or
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delaying certain complications requiring expensive hospitalizations, providers of
dialysis care will quickly move to implement a strong nutritional follow-up and therapy
in their treatment protocols.

In conclusion, the research manuscripts included in this thesis supports a change in
the management of patients on dialysis, with more focus on the nutritional aspects
and the implementation of therapeutical measures able to prevent or correct in early
phase protein-energy wasting. More research is required to define which therapy is
more effective, and appropriately designed randomized clinical trials are urgently
needed.

References

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