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Impact of dialysis modality on the patient survival

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Hemodialysis is a well-recognized life sustaining therapy representing the first renal replacement therapy option for end stage kidney disease (ESKD) patients worldwide. A substantial body of evidence has been built around the outcomes of various dialysis modalities. There are still some controversies about which hemodialysis modality provides better outcome to patients since survival may be attributed to the dialysis modality itself or to other factors.

To better address this question, one must recognize that dialysis patient survival results from a complex and multifactorial equation that includes the patient profile (age, gender, ethnicity, life style, kidney disease, comorbidities, observance), the renal replacement therapy (dialysis modality, adequacy, treatment time, vascular access, dialysis fluid purity, patient trajectory) and the care provider service (health care system, practice patterns, care management, supports, quality assurance). As indicated, hemodialysis modality is only one important factor among many others that contributes to patient survival.

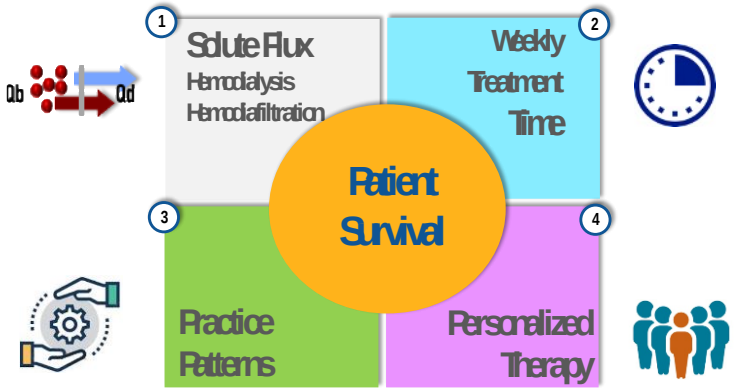
In this presentation, we concentrate and review some selected factors related to hemodialysis modality and practices. For this purpose, we concentrate on the 'four pillars' that may be considered as crucial for improving hemodialysis patient survival.

The first pillar focus on solute flux represents the mean of best controlling accumulated uremic wastes regarding middle and large molecular weight compounds. In this section, we will review clinical facts and supportive mechanisms (biologic and pathophysiologic) having led to the development of low-flux, high-flux and then highly efficient hemodiafiltration.

The second pillar focus on weekly treatment time, delivered either as a long slow or more frequent dialysis treatment schedule, for providing an efficient mean of enhancing treatment efficacy and improving long term survival of dialysis patients.

The third pillar focus on practice patterns based on DOPPS data. In this section, we show that implementation of best clinical practices and quality control system may help to improve dialysis patient survival.

The fourth pillar focus on personalized dialysis therapy as a way of improving survival. In this section, we review clinical and biological benefits of nocturnal, daily and various home hemodialysis therapies.



We conclude, that improvement of patient survival in hemodialysis requires a combined action consisting in using more frequently high-efficient hemodiafiltration, increasing treatment time and frequency, improving practices and care delivery on a daily basis and individualizing dialysis therapy to patient needs and tolerance.