

- Title** Health technology assessment of the different dialysis modalities in Norway
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### Aim

Our objective was to perform a Health Technology Assessment comparing efficacy, safety and cost-effectiveness of the different dialysis modalities 1) Hemodialysis carried out in hospital, 2) self-care hemodialysis in hospital, 3) hemodialysis in satellite units (nursing home, local medical centre), 4) hemodialysis at home and 5) peritoneal dialysis at home for patients above 18 years with end-stage renal failure requiring dialysis in Norway. Our outcomes were mortality, complications that require special measures and quality of life.

### Conclusions and results

In our model analyses all dialysis modalities were almost equally effective. When effects are combined with cost, hemodialysis at home was the most cost-effective alternative among the hemodialysis modalities. Peritoneal dialysis was the least expensive and hence the most cost-effective alternative compared to all hemodialysis modalities.

### Methods

In this HTA we performed a systematic literature search for systematic reviews, randomized controlled trials and controlled observational studies to find information about mortality, complications that require special measures and quality of life for the specified dialysis modalities. The quality of the evidence for each outcome was assessed by GRADE. We performed a cost-utility analysis (CUA) where relevant costs were expressed in 2012 Norwegian kroner (NOK), and effects were expressed in quality-adjusted lifeyears (QALYs). The analysis was carried out from both a societal and healthcare perspective.

In order to assess the cost-effectiveness of different dialysis modalities, a decision analytic model was developed in TreeAge pro<sup>®</sup> 2012. The model is of the Markov type, in which a cohort of patients is followed over a given period of time. A Markov model was considered appropriate as end stage renal failure (ESRF) is a chronic condition requiring continuous treatment. The results were expressed as mean incremental cost-effectiveness ratio (ICER) and mean incremental net health benefit. Uncertainties in model parameters were handled by performing one-way (tornado diagram) and probabilistic sensitivity analyses, designed as a Monte Carlo simulation, with 1000 iterations. etc).

### Further research/reviews required

We acknowledge that performing randomized controlled studies in this population is difficult, but urge trialists to do their best to match study groups as well as possible and describe possible confounders. There is considerable uncertainty around the cost estimates. Therefore, it is most reasonable to conduct further prospective studies on the costs associated with different dialysis modalities in Norway.

### Written by

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