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Continuous subcutaneous insulin infusion for the treatment of diabetes (review)
Review Consultation

Thank you for inviting the Royal College of Paediatrics and Child Health to comment on the review of the above document.

General Comments:
There is a recent ESPE consensus document (attached to the email) endorsed by the BSPED, which NICE may wish to consider.

This is an important issue as there is a surprising discrepancy in clinical practice in the UK compared to the rest of the world and it is not clear to what extent use of the pump in the UK has been retarded either by cost implications or the lack of clinical evidence as to its utility. In the UK, use of the pump is sparing with the exception of a few enthusiasts whose tendency is to justify their use of pumps by 1) the perceived importance of supporting patients to look after their diabetes in the way they themselves prefer and 2) suggesting anecdotal evidence of great benefit without much objective evidence to support their case. In a sense, this reflects the evidence summarised in this well written systematic review which lends weight to the need for well designed and delivered trials of pump therapy developed independent of commercial support. It is disappointing that such trials have not been developed in recent years and given the uncertainties about outcomes and cost implications, I think this should be a research priority in the paediatric diabetes world in the near future.

Questions:

1. The evidence base used is as complete as any other available, and the interpretations are valid. If anything, the clinical effectiveness of insulin pumps is understated. There is a vast experience of insulin pumps amongst paediatric diabetes clinics world-wide. Their enthusiastic uptake is not merely a response to new fashions. When talking to other clinicians, severe hypoglycaemia in particular seems to be significantly less likely for children using CSII, and the control of diabetes in the pre-school child is also much easier with an insulin pump. From the paediatric perspective, I agree with the interpretation of the evidence base.

2. I am not aware of major omissions in the evidence base at the time the literature review was being performed. There are numerous abstracts on the outcomes of insulin pump therapy that have understandably not been included in the consensus statement, but the vast majority reinforce the effectiveness of insulin pumps.

3. As a clinician with over 50% of my paediatric age-group patients currently using insulin pumps, and experience of 89 insulin pump starts, I consider the suggestions given in the consensus statement for starting children on insulin pumps as wise and practical. They reflect our own clinical experience. They should form a basic starting

point for the establishment of insulin pump services to children in the UK. I have attached an appendix which details our own experience and outcomes (attached). We have not found it necessary (or possible) to provide a separate insulin pump service and insulin pumps are provided as part of the diabetes clinic in a small DGH. We have also assisted 3 other clinics in starting their own insulin pump provision, offering them advice, documentation, support with their first pumps starts and educational materials.

With appropriate support from an experienced insulin pump team it should be possible for any paediatric diabetes clinic to safely provide insulin pumps to their children. The clinical results need to be interpreted with caution given the lack of RCTs and potential biases which may be operating in other studies which have been reported. Nevertheless, the current healthcare climate recognises the importance of the expert patient and the importance of consulting them about how most appropriately to manage their diabetes. Given that even in the absence of an evidence base to support the use of pumps, this technology will undoubtedly appeal to certain individuals it would seem important that there is a place in the UK therapeutic armamentarium for such treatments in those that request it whilst being realistic about the likely benefits.

4. The economic models produced do not reflect the different needs and long-term prospects for children. Recent statements from the ADA and others have suggested that we can expect an 18-19 year reduction in life expectancy of a child with diabetes diagnosed in the year 2000. This does not account for the increased health costs of treating complications and reduced tax income from invalids unable to work. The DCCT showed that complication rates effectively doubled with every 1% increase in HbA_{1c}. Pooling together the results of all studies into insulin pumps in children an average, sustained reduction in HbA_1 of around 0.6% is found, which if translated into risk of complications represents a 40% reduction from current levels. Despite the models being applied for adults with diabetes they do suggest significant gains in Quality at costs less than many other routine therapies.

   There are many assumptions underlying the economic modelling and the authors have been realistic in identifying those that have been included in the model as well as those which have not. However, taking into account all the many uncertainties I have concerns about the accuracy of any likely cost estimates though I must admit, I do not have training in health economics.

With thanks to:
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