Sugar-free medicines are counterproductive

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OPINION

IN BRIEF

- Reports that sugar in medicines, which is a minuscule percentage of total sugar consumed by most children, has not been shown to cause poor dental health.
- Highlights that sugar makes medicines palatable, while bitter medicines cause poor compliance and increase risk of complications.
- Stresses the need to revisit the policy of promoting sugar-free medicines for short term conditions.

Sugar in food and drinks is responsible for the poor dental health of many children and adults. On the other hand, there is no evidence that the small amount of sugar in medicines has been responsible for any dental problems. A recent British Heart Foundation survey found that nearly one in three UK children are eating sweets, chocolate and crisps three or more times a day. Hence it is futile administering sugar-free medicine to a child consuming lot of sweets. Moreover, sugar in medicines makes them palatable and bitter medicines inevitably affect compliance with the prescribed treatment. Poor compliance leads to inadequate treatment of illness and consequently increases the risk of complications from illness. Hence sugar-free medicines promoted as a public health policy could have actually caused more harm than any meaningful net benefit. There is an urgent need for a healthy debate and a fresh look at the policy of promoting sugar-free medicines.

INTRODUCTION

Countless parents and nurses would admit that administering bitter tasting medicines to children is a difficult task. But the Department of Health guidance *Delivering better oral health*, published in July 2009, recommends sugar-free medicines for all young children.[1]

Surprisingly, there is very little robust evidence to suggest that sugar-containing medicines have led to an epidemic of iatrogenic illness, such as tooth decay. Most of the literature advocating sugar-free medicines seems to be predominantly clinical opinions expressing concerns about the risks of tooth decay.[2] The supporting evidence, quoted by the Department of Health publication, is an interesting, small, hypothesis generating study that should have led to larger studies evaluating overall benefit (or lack) of sugar-free medicines before a major change in public health policy.[3] This small case control study compared 94 diseased children and their healthy siblings.

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LIMITATIONS WITH THE EVIDENCE

The study found more dental caries in diseased children compared to their healthy siblings. However, there are many confounding factors inherent in this study. The study included children with a wide range of medical problems such as epilepsy, cystic fibrosis, chronic renal failure, asthma, recurrent urinary tract infections, cardiac disease and chronic constipation. First and foremost, this very non-homogenous group makes it very difficult to apply the findings from this study to the general population. Furthermore, the comparator group of healthy children is probably not an appropriate one since many diseases themselves can directly lead to poor dental health. For instance, cystic fibrosis affects salivary glands which in turn can lead to poor dental health. Many chronic diseases can be associated with recurrent dental infections due to poor immunity and can be associated with tooth decay. Children, whose asthma is being treated by steroids, are more prone to develop oral thrush and poor dental health. In addition, there are too many other confounding factors which this small non-randomised study could not have accounted for. Parents and family members could have given more sweet treats to sick children than their healthy siblings. Other significant confounding factors, such as the erosive properties of active medical ingredients, poor brushing habits of diseased children etc, could have equally accounted for the difference noted in this study.[4]

SUGAR CONSUMPTION

There are significant flaws with the concerns expressed against sugar-containing medications. Firstly, the sugar in medicines is likely to be a very small percentage of total sugar consumed by the children nowadays. A recent British Heart Foundation survey, published on 23 November 2011, found that nearly one in three UK children (29%) are eating sweets, chocolate and crisps three or more times a day.[5] The survey found that 'UK kids are turning their backs on fruit and veg in favour of snacks loaded with fat, salt and sugar'. Hence sugar in medicines taken occasionally is likely to be a minuscule proportion of total sugar intake by children and is very unlikely to be a significant cause of tooth decay in children. Furthermore, some of the sugar-free medicines are not significantly less erosive than sugar-containing medicines, thus undermining the very rationale for sugar-free medicines.[6]

SUGAR-FREE MEDICINES

Most worryingly, there is evidence of harm from the use of sugar-free medicines. Compliance with prescribed medicines is

a major problem in all disease settings. It is estimated that compliance in paediatric patients ranges from 11% to 93% and that at least one third of all patients fail to complete relatively short-term treatment regimens.[7] There is ample evidence to indicate that poor palatability affects compliance with medication in both adults and children. One study evaluating compliance reports that palatability is a problem with 10 to 30% of patients taking antibiotics.[8] Parent's views expressing this very obvious fact of poor compliance due to sugar-free medicines seems to have been ignored in a study.[2] Moreover, many illnesses cause altered taste and odour, which further aggravates the problem of palatability.[9] Thus sugar-free medicines which potentially impair compliance, particularly in children, can lead to inadequate treatment of underlying illnesses and consequentially more disease related complications.[7]

Artificial sweeteners in medicines are an alternative to sugar but there are theoretical concerns associated with artificial sweeteners as well. Artificial sweeteners can have unintended metabolic effects and have the potential to cause weight gain.[10] Even though case control studies have been reassuring, the general public do have concerns about the carcinogenic potential of artificial sweeteners observed in animal studies.[11] The hypothetical risks of artificial sweeteners such as obesity and carcinogenocity are no less of a concern than the hypothetical risk of tooth decay due to the relatively small amount of sugar in medicines.

CONCLUSION

Clinical medicine is always about weighing up benefits and risks of every intervention. There are likely to be many clinical situations where the benefits of better compliance due to sugar-containing medications outweigh the theoretical risks associated with them. While some sugar-free medicines are essential for chronic conditions, the exclusive use of sugar-free medications (for example oral antibiotics, analgesics for children) for short-term illness is not clinically justifiable. There is an urgent need for a healthy debate and fresh look at this policy of promoting sugar-free medicines.

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