Comparing rbST-Free, Organic, and Conventional Milk

To the Editor:

Vicini and colleagues reported on differences in milk labeled as recombinant bovine somatotropin (rbST) free or organic and compared both to conventional milk (1). The reader is led to believe that the comparator (conventional milk) was produced from rbST-treated herds, and that is indeed true or, at best, partially true. There is, however, a problem accepting their conclusions as valid. Although the authors do note that “milk sold at retail is pooled from multiple dairy farms,” this is not considered in detail. In fact, in 2007 only about 17.2% of American cows were treated with rbST (2), and that 17.2% is diluted by pooling. The result is that 82.8% of the conventional milk assayed in this study is from non–rbST-treated animals, and so the pooled milk is not really representative of the composition of the milk produced by a homogenous herd of rbST-treated animals. Could Monsanto be persuaded to repeat the work, studying milk from two or three herds of 100% rbST-treated animals (ie, true rbST-stimulated milk undiluted by milk not so stimulated)?

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Authors’ Response:

Dr Danby correctly points out that milk is pooled from cows at different stages of lactation and among farms. He presumed that the purpose of the study was to test for effects of recombinant bovine somatotropin (rbST), per se. Instead, our study was conducted to determine the composition of milk when a consumer chooses milk based on any of the three management labels (ie, conventional, rbST-free, and organic). The conclusions are relative to the level of use of rbST and other farm management practices implemented for all herds during the time when the samples were collected. For instance, any study that examines composition of organic milk would be affected by the time of year. Cows managed for organic milk may consume a large portion of their feed by grazing in summer months, but would have no grazed forage in the winter. Milk composition from New Zealand would be affected by the time of year since cows calve seasonally.

A “no dilution” study suggested by Danby would not yield meaningful data because comparing milk from a small number of herds would not be statistically relevant as the result of low degrees of freedom due to “herds” being experimental units. In addition, approximately 35% of milk from a farm using rbST comes from cows not being supplemented at all. Numerous published studies specifically designed to compare individual cows (not herds) are more informative (1,2). In the latter review, under controlled conditions, and systematically comparing milk from similarly timed samples, across adjacent milking cycles, on the same farm, with and without rbST (at a dose used to elicit a typical milk yield response), milk bST levels are unchanged. rbST treatment has negligible to small effects on milk insulin-like growth factor 1 concentration (1). Most important, these increases are insignificant relative to the large variation over the lactation cycle, across the life of a cow, between cows, between breeds, and across seasons. The effect of rbST on microconstituents in milk (2).

Consumers buy pooled milk. And it is not surprising that any small changes in milk composition that could be attributable to rbST are overwhelmed by the much larger variability among animals contributing to commercial milk. Thus, the results of our study accurately report the composition of brands of retail milk in the current marketplace that are “differentiated” on the basis of farm management practices.

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References


Dietetic Management of People with Cystic Fibrosis

To the Editor:

We read with interest the report by Stallings and colleagues on the recommendations of the US Cystic Fibrosis Foundation’s Subcommittee on Growth and Nutrition (1). This guidance will assist dietetic management of people with cystic fibrosis, particularly with regard to identifying those at nutritional risk.
We note that for individuals with growth or weight deficits, the authors recommend “use of nutritional supplements (oral and enteral), in addition to usual dietary intake to improve the rate of weight gain.” We were investigators in the CALICO multicenter randomized controlled trial, which showed that children with cystic fibrosis who were moderately malnourished did not show a significant improvement in nutritional indexes after a year of treatment with oral nutritional supplements and dietary advice compared to those who received dietary advice alone (2). A Cochrane review of the use of these supplements in children and adults with cystic fibrosis has found no evidence of benefit from their use (3).

We note that the systematic review on which these recommendations are based considered articles published between January 1998 and February 2005. So the literature search for this review should have identified the Cochrane review, but would not have included the report of the CALICO trial. It is not clear to us why the Cochrane review was not included in the evidence base for these recommendations and it is disappointing that the CALICO trial, to our knowledge the largest trial of a nutritional intervention in people with cystic fibrosis, was also not included.

Consequently we feel that the report’s recommendations about use of oral nutritional supplements for people with cystic fibrosis are misleading and we suggest that dietitians recommending the use of such supplements as indicated in the report by Stallings and colleagues should consider these findings if they are to achieve the aims of improving weight gain and nutritional status in children with cystic fibrosis.

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References


Author’s Response:
We appreciate the comments from our colleagues about the recent evidence review and nutrition practice recommendations (1) for children and adults with cystic fibrosis. One of the four questions examined was: What is the evidence of a relationship between energy intake and nutrition status? The subcommittee found good evidence that higher energy intake resulted in improved weight gain. Evidence was lacking that demonstrated higher energy intake resulted in improved stature. One of the recommendations that followed this finding stated, “For children with growth deficits and adults with weight deficits, the Cystic Fibrosis Foundation recommends the use of nutritional supplements (oral and enteral) in addition to usual dietary intake to improve the rate of weight gain.” This was reported as grade B evidence using the US Preventive Services Task Force method (2).

Watling and colleagues asked why the 2000 Cochrane review of oral calorie supplements for cystic fibrosis (3) and the CALICO Trial (4) were not included. Our process included peer-reviewed publications from January 1988 to February 2005. The 2000 Cochrane review was found and searched for relevant studies. In 2007, Smyth and Walters updated the 2000 Cochrane review (5) and added the Kalmins and colleagues (6) study and Poustie and colleagues (4) CALICO report; both were published after the close date for our literature search. In the interest of mentioning another recent related publication, Lui and Shoff (7) presented the implications for evaluating and benchmarking clinical practice related to classification of malnutrition in cystic fibrosis using some of the recommendations.

The CALICO Trial included 102 children with mild to moderate cystic fibrosis lung disease and moderate malnutrition from 14 cystic fibrosis centers in the United Kingdom. This was a 12-month, randomized controlled trial of oral protein energy supplementation plus dietetic advice vs dietetic advice alone in children 2 to 15 years of age. This is the first randomized controlled cystic fibrosis trial of this type and sample size and is an important contribution. The results demonstrated no difference between the two groups in nutritional status (weight, height, body mass index, mid-arm circumference) or in pulmonary function. The supplementation group reported a significant 24% increased caloric intake and the dietary advice only group increased 7%. The authors stated the increased caloric intake should have resulted in an average of 10 kg weight gain over the 12 months for the supplemented group; however, there was no relative weight gain. The authors suggested that the unexpected outcome was the result of the supplement group submitting inaccurate dietary records; during the study under half of the dietary intake records were returned and the investigators questioned their accuracy.

The likely cause of the findings, also mentioned by the authors, was that subjects did not consume the prescribed supplements. If this were the case, then the intervention was not successfully implemented and the oral protein energy supplement efficacy hypothesis was not tested in the CALICO Trial. We respectfully dis-

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LETTERS TO THE EDITOR