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Oat safety for celiac disease patients: Could inadvertent gluten contamination in oats lead to inconsistent clinical findings?

An effective treatment for celiac disease (CD) has been a gluten-free diet (GFD). A GFD can benefit from the inclusion of oats due to the fiber and nutritional benefits provided. There has been debate though, whether oats can be safely consumed by CD patients. This is due to inconsistent research findings, generally presumed due to differences in individual CD subject's sensitivities to oat proteins. Oat studies have presumed the oats used as lightly contaminated, if at all. Recent research has shown difficulty in assessing them as such though, as oat's propensity to be 'kernel' contaminated (with wheat, barley, and rye) complicates assessment. Oat feeding studies to date, therefore, could have inadvertently provided pill-like contaminant kernels randomly to study subjects.

This possibility has been investigated. The approach being to:

1. Review literature for applicable oat feeding studies.
2. Estimate gluten dosages/day for those (due to probable oat contamination).
3. Evaluate if estimated contamination correlates to resulting clinical and morphological reactions.
4. Compare these correlations to those for CD gluten dosage response studies.

Findings show:

1. A wide range of gluten dosages due to potential oat contamination in feeding studies.
2. Possible gluten contamination is sufficient to affect subjects clinically, but not morphologically.
3. Estimated gluten contamination correlates to clinical outcomes (p-value = 0.0006 for all studies, 0.079 for those using GF oats).
4. Projected gluten dose response in oat studies was found comparable to that for low dose gluten studies (p-value = 0.33), but a number of studies are considered too small to draw

Conclusions: Due to the above, it is believed that conclusions of studies to date finding oats toxic for some CD patients can be questioned due to this possibility.

Biography

Ron Fritz has been a consulting statistician in various industries for 20+ years. He is currently a global subject matter expert for PepsiCo, Inc. as Sr. Principal Engineer - Statistician. He has a wide range of experience in the application of statistics in various settings. A recent area of interest is gluten-free oatmeal compliance, where he has authored five articles on the subject. Ron holds a PhD in Industrial Engineering from Clemson University and MS/BS degrees in Systems Management and Engineering Technology from the University of Southern California and National University respectively.

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