

Rationale

Many paediatric tube feeds, which are intended to be used as the sole source of nutrition to support growth and development, are indicated for use in clinical situations involving significant free radical production. Under these circumstances, the antioxidant (AOX) profile of a feed may be of particular importance in moderating oxidative damage, yet little is known about the functional capacity of individual products.

Methods

The aim of this study was to assess the functional capacity of AOX contained in a selection of paediatric tube feeds suitable for use during active Crohn's disease (Nutrini Peptisorb[®], Modulen IBD[®], Alicalm[®], Peptamen Junior[®]). The overall AOX capacity of each feed was measured using the FRAP assay, which measures the combined reductive activity of all reacting AOX present in a sample and also the ORAC Assay, which measures the AOX response to peroxy radicals. AOX capacity per 1000kcal was compared between feeds using T-tests.

Results

Table 1: AOX Capacity per 1000kcal (mean \pm SD)

	mM Fe ²⁺ produced (FRAP)	mM Trolox equivalent (ORAC)
Peptamen Junior [®]	10.3 \pm 0.36	10.9 \pm 0.08
Modulen IBD [®]	6.8 \pm 0.28	10.2 \pm 0.28
Alicalm [®]	8.2 \pm 0.07	8.3 \pm 0.14
Nutrini Peptisorb [®]	7.1 \pm 0.12	10.5 \pm 0.10

The AOX capacity of Peptamen Junior[®], measured either by FRAP and ORAC, was significantly greater than that AOX capacity than both Modulen[®] ($p < 0.01$) and Nutrini Peptisorb[®] ($p < 0.01$). Results for Modulen[®] and Nutrini Peptisorb[®] were not significantly different.

Conclusion

Further research is necessary to establish whether differences in the AOX capacities expressed per 1000kcal have any implications about their effectiveness in moderating AOX damage in clinical conditions.