

Letter to the Editor

Efficacy of donkey's milk in treating highly problematic cow's milk allergic children: an *in vivo* and *in vitro* study

Editor,

The letter by C. Alessandri and A. Mari raises so many major and minor points that we would like to replay to it point by point, as it looks very much like as a referee comment.

Line 3: 'Up to now children have never been fed with donkey milk (DM)'. This statement is only acceptable for the general population but not for children and specially not for cow's milk allergic children, as for instance is clearly reported by A. Carroccio et al. in *Clinical and Experimental Allergy* 1999; 29: 1014–1016 (p. 1015: 'We have a long experience in the use of ass' milk, in patients with CMA/I and/or multiple food allergy'). Among older people, and also older paediatricians, it is very well known that donkey's milk had been traditionally used to feed problematic children in many southern Italian regions, not only in Sicily.

Lines 8–12: 'The wealth of knowledge on protein sequences from different organisms gives us the.... This is absolutely true from a general, aspecific point of view but cannot be applied to such a complex protein mixture as a natural milk, especially if only a very few number of sequences are known for that species, as is the case for the donkey. Indeed, the letter's authors were able to report the Blast sequence comparison for only three proteins (α -lactalbumin and two isoforms of β -lactoglobulin), certainly not the most allergenic proteins of cow's milk, because of this lack of knowledge.

Lines 13–22: 'FAO and WHO1 defined an algorithm to evaluate the introduction of new proteins in...'. The algorithm, or decision tree, cited by Alessandri and Mari deals only and specifically with proteins (single, specific and very well-described proteins) derived from genetically modified foods, as is clearly stated already in the title of this Report of Expert Consultation. Even if donkeys were to be considered as genetically modified cows, this

decision tree could not be applied to the whole set (100s) of proteins contained in donkey's milk.

Lines 23–25: 'Monti's paper shows two IgE immunoblotting with CM and DM respectively. Authors...'. The IgE immunoblotting with DM (Fig. 1b of the paper *Pediatr Allergy Immunol* 2007; 18: 258–264) shows an aspecific binding of donkey's milk proteins to the IgE of cow's milk allergic children in such a way that is not possible to discriminate, with this method, those children tolerating donkey's milk and those not. Actually, in the figure reported, it is very visible that there is not a 'lack of IgE binding to DM' but a lack of specific binding.

Lines 25–30: 'The two milks employed for food challenge, and ...'. Indeed, the two milks employed for *in vitro* and *in vivo* tests underwent similar treatments: commercial fresh (cow's) milk does not mean 'raw' but pasteurized, even when this is not specifically stated. That is why the donkey's milk was heated to 70°C and then skimmed, to resemble the heat treatment undergone by the cow's milk.

Lines 31–35: 'Furthermore, the studied population was not homogeneous to reach convincing....'. The 46 children enrolled in our study were all clinically allergic to cow's milk proteins and none of them could be fed with any of the usual cows' milk substitutes recommended in these cases (extensively hydrolysed formulas, pure amino-acid formulas, soy-protein-based formulas): in this respect, it should be considered a homogeneous group.

Lines 36–38: 'According to authors, DM does not achieve the 90% tolerability value required to define an...'. As reported in the letter, we are very well aware that only 82% of our children tolerated donkey's milk – even taking into account that these 46 children were not 'normal' cow's milk allergic children but 'highly problematic' cow's milk allergic children. For this very

reason we wrote that ‘Our study found DM to be a valid feeding solution in a selected population of children with CMPA’ and that we hope that ‘its increased availability would enable studies to be performed to evaluate the possibility of utilizing it in the general population of subjects with CMPA’, rather than thinking to use the decision tree reported by the expert consultation of FAO and VHO for genetically modified foods, as already discussed.

Last but not least, in none of our papers can the suggestion be found that DM could be used by children with ‘severe’ CMPA (who are quite different from ‘problematic’ CMPA children). Nor is this implied in the reported web site (which is in Italian, thus perfectly understandable to the authors of the letter). Rather, our overall policy, clearly stated on the web site section ‘A chi serve’ i.e. ‘For whom’, is that donkey’s milk must always be prescribed by, and used under the

direct control of, a specialist (doctor), so as to avoid all kinds of risk.

*Giovanna Monti¹,
Enrico Bertino²,
Maria Muratore Cristina¹,
Alessandra Coscia²,
Francesco Cresi¹,
Leandra Silvestro¹,
Claudio Fabris²,
Donatella Fortunato³,
Maria Giuffrida Gabriella³ and
Amedeo Conti³*

¹*Department of Paediatric and Adolescence Science, Regina Margherita Children’s Hospital,*

²*Neonatal Unit, Department of Paediatric and Adolescence Science, University of Turin,*

³*CNR-Institute of Science of Food Production, Turin, Italy*