Mo.Mi.C.K. - Mother's Milk in chronic kidney disease: a case-control study

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Objective. Chronic kidney diseases are widespread amongst obstetric patients.
Breastfeeding is the reference normative standard for infant feeding and nutrition.
Nevertheless, we lack evidence regarding how CKD affects human milk composition and clinicians often discourage breastfeeding in nephropathic women.
To evaluate milk composition and nutritional adequacy in mothers affected by CKD.
Materials and Methods. Six pregnant nephropathic women followed in the CKD centre of Sant'Anna Hospital, were recruited from February 2021 onward and each paired with two controls. Milk was collected on the 7th-14th-28th-60th day post-delivery. At ISPA laboratories quantification and characterization of protein and non-protein nitrogen content was performed by using Dumas and OPA method. Auxological and neurodevelopmental follow-up of infants was performed at 40 weeks and 3 months of age using NBAS. Linear mixed models analyses was conducted to compare milk composition.
Results. 5 cases and 10 controls were recruited. Of the 5 cases, 3 presented CKD stage 3 and 2 presented nephrotic syndrome. Of the 5 infant-cases, 3 received exclusive breastfeeding, 2 mixed feeding.
A preliminary comparison of milk showed that there were non-significant differences regarding nitrogen and protein content between cases and controls. The non-protein nitrogen content was higher in nephropathic patients, and positively related with their serum creatinine and urea levels. Infants showed appropriate growth and neurobehavioral development. No adverse effects of the higher non-protein nitrogen content were clinically detected.
Conclusions. This pilot study suggests that breastmilk of women affected by CKD maintains adequate nutritional and biological properties. Therefore, breastfeeding should be encouraged.

Figure 1. *Milk protein nitrogen content (a) and non-protein nitrogen content (b) (in g//100 ml) in cases (brown) and controls (green) at 7-14-28-60 days post-delivery.*