



## Pathology Biology Section – 2006

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### **G98 Immunohistochemical Examination of $\alpha$ -Lactalbumin in SIDS (Sudden Infant Death Syndrome)**

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After attending this presentation, attendees will understand the usefulness of semiquantitative comparison of  $\alpha$ -lactalbumin immunohistochemical staining in evaluating cases of suspected SIDS (Sudden Infant Death Syndrome).

This presentation will impact the forensic community and/or humanity by demonstrating the use of alpha-lactalbumin in the diagnosis of SIDS. The aim of this study is to evaluate the presence or absence of milk's particles within pulmonary histologic sections of 10 infants whose cause of death was suspected to be asphyxia due to human breast milk aspiration.

$\alpha$ -Lactalbumin is a whey protein. Previous immunohistochemical research with this antibody in SIDS deaths has been useful in some cases where aspiration was suspected as a cause of death (Iwadata K. et al., 2001).

The authors selected 10 cases of SIDS from the archives of the Section of Legal Medicine and Pathological Anatomy of the University of Bari. All tissues were embedded in paraffin. In order to demonstrate aspirated milk within the lungs, histological sections stained with HematoxylinEosin (H&E) were initially evaluated. In each case, and when the staining was positive or suspected by H&E, immunohistochemical staining using commercially available anti-human  $\alpha$ -lactalbumin antibodies was performed.

The authors compared the results of the 10 infants with pulmonary sections from a control group of five infants in which the cause of death was due to a cardiac malformation. In the control group of five deaths, none were positive for the antibody, while in the studied group there were two kinds of results. In the experimental group, one pattern showed small quantity of protein suggestive for a gastroesophageal reflux or cardiopulmonary resuscitation, with both of these factors a cause of terminal inhalation. In the second pattern, there was clear positivity of immunohistochemical staining. This result was clearly interpreted to mean that aspiration was the cause of death.

This method allows the pathologist to evaluate in a semiquantitative manner for the possibility of milk aspiration (Iwadata K. et al., 2001). Using this technique, the authors are able to evaluate in detail cases in which the circumstances, the autopsy, and the classical histological techniques alone do not allow for a definitive diagnosis. It is possible that a re-examination of cases of SIDS using this technique could be useful in evaluating for the possibility of breast milk aspiration.

**Lactalbumin, Breast Milk Aspiration, Immunohistochemistry**

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