

NON-INVASIVE MONITORING OF THE REPRODUCTIVE STATUS IN TURSIOPS TRUNCATUS FEMALES: IMPORTANCE IN THE MANAGEMENT OF ANIMALS HOUSED IN CONTROLLED ENVIRONMENT

Patrizia Ponzio¹, Viviana Stella², Salvatore Parrillo², Federico Noto², Augusto Carluccio² and Elisabetta Macchi¹

¹Dipartimento Scienze Veterinarie, Università degli Studi di Torino

²Ospedale Veterinario Universitario Didattico, Università degli Studi di Teramo

The monitoring of the reproductive status of marine mammals is very important for their management in a controlled environment. The endocrine status of these animals is normally monitored by collecting blood. However the operation repeated over time can be stressful for the animals and can predispose to tissue inflammation and microbial infections (Pedernera et al, 2006).. Scientific research is oriented towards the use of non-invasive techniques for collecting saliva, feces and recently expired air for routine investigations (Tizzi et al, 2010 - Turner et al, 2008).

The aim of this study was to monitor and comparing Progesterone (P4) values in Tursiops truncatus females, using expired air (Tizzi et al, 2010) and serum samples and evaluate the correspondence with clinical findings during the routine health check of these animals in order to optimize their reproductive management (Biancani et al, 2009).

This study was carried out on 4 females hosted in the Oltremare Park (Riccione Italy) during a 4 months period. Systematic withdrawals of expired air and blood were made through operant conditioning (Brando, 2010). Meanwhile these animals underwent reproductive ultrasonographic evaluations. The blood and expired samples P4 concentration were determined using immunoenzymatic assay method.

Due to the small number of samples it has not been possible to obtain a representative statistical support; and a significant correlation was not observed between expired and serum P4. However, data obtained are supported by clinical investigation results. To high values of P4 on blow corresponding to ultrasound confirmation of pregnancy. Further studies should be conducted in order to improve this innovative method and find a statistically significant correlation. And introduce the use of breath as a source of frequent, quick and invasiveness, biological sample during the routine procedures. (Pedernera-Romano et al, 2006 - Brando, 2010). It may also be used in the future to determine other steroid hormones in order to improve the monitoring of these animals welfare.

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Pedernera-Romano C et al, 2006: Salivary cortisol in captive dolphins (*Tursiops truncatus*): a non-invasive technique, *Animal Welfare*, 15, 359-362. Tizzi R et al. Non-invasive Multidisciplinary Approach to the Study of Reproduction and Calf Development in Bottlenose Dolphin (*Tursiops truncatus*): The Rimini Delfinario Experience *International J of Comparative Psychology*, 2010, 23, 734-776.

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