C8 | MAMMARY TUMORS INCIDENCE: A COMPARISON BETWEEN THREE STUDIES CARRIED OUT IN FEMALE RATS

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Introduction: Breast cancer is still one of the most frequent malignancies among women. The mammary lesions induced by the carcinogen N-methyl-N-nitrosourea (MNU) are remarkably comparable to those observed in women. This work aimed to compare the mammary cancer incidence in female rats exposed to MNU in three different experimental protocols, envisioning to study mammary cancer development and progression.

Material & Methods: Twenty-one female Sprague-Dawley (SD) and seven Wistar rats of four weeks of age were used. The first trial (T1) with SD (n=11) lasted 35 weeks, while the second one (T2) (n=10) lasted 18 weeks. The third trial (T3) with Wistar rats (n=7) lasted 19 weeks. All animals received an intraperitoneal injection of the carcinogen MNU (50 mg/Kg), at seven weeks of age. The animals were palpated twice a week for mammary tumors' detection. The latency period, the incidence, the number of mammary tumors, and the mean number of tumors *per* animal were registered for all protocols. All experiments were approved by the Ethics Committee and National Competent Authority. Data were analyzed using Microsoft Excel®.

Results: The first tumor was detected ten and nine weeks after MNU administration in T1 and T3, respectively. A shorter latency period was observed in T2, with the first tumor detected eight weeks after the carcinogen administration. Eighteen weeks after the MNU administration, a total of five mammary tumors were detected by palpation in T1, 21 tumors in T2, and six tumors in T3. At this point we observed an incidence of only 45.5% (5/11) in T1, and 60% in T2 (6/10) and T3 (3/6). The mean number of tumors *per* animal was 1.0 in T1, 3.5 in T2, and 2.0 in T3. At the end of T1, 35 weeks after the MNU administration, 28 mammary tumors were detected by palpation, and the incidence of 100% was reached, with a men number of 2.5 tumors *per* animal.

Conclusions: We can conclude that both SD and Wistar strains are sensitive to MNU administration. The different latency period, even when used the same strain, may be related with individual response of animals to carcinogen. A higher number of mammary tumors at 18th week in T2 suggests that SD rats presented a higher sensitivity to the MNU administration, when compared with Wistar rats. We can also conclude that the duration of the study considerably alters the success of the induction, with an incidence of 100% reached only in T1 lasting 35 weeks.

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