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RECENT ADVANCES IN DOPING ANALYSIS (10)

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BRIEF REPORT ON THE DOPING CONTROL DURING THE XIVth MEDITERRANEAN GAMES IN TUNIS

From 2nd to 15th of September 2001

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ABSTRACTS

This study summarizes the results obtained during the XIVth Mediterranean Games from 2nd to 15th of September 2001 in Tunis. The analysis of all doping control samples was performed at the IOC accredited laboratory in Tunis. Controlling prohibited substances in competing players was the major aim of this laboratory. During these 14 days 369 samples were analyzed, ranging from 16 to 48 per day, 59 % of total samples corresponds to men.

Procedures, instrumentation, staff organization, sample distribution and the obtained results will be described.

1- INTRODUCTION

The XIVth Mediterranean Games was held from 2-15 of September 2001 in Tunisia. The doping analyses were carried out in the IOC accredited antidoping laboratory of Tunis (Laboratoire de dépistage de dopage-Tunis).

2- Laboratory staff and equipment:

The laboratory was equipped by different variability of instrument (Table 1). During Mediterranean Games, the laboratory was run by young staff. Besides the general director and the technical director, the staff included seven chemist engineers and three scientists. Two months before the Games, two volunteer engineers were recruited and included in the team involved in the doping control as additional collaborators.

In addition to these staff members and collaborators, two chemists from the doping control laboratory in Madrid provided support and experience to the young laboratory staff during these Games.

Table. 1 Instrument used for the analysis.

Equipment	Quantity	Model	Detector
GC/NPD	2	HP6890	NPD
GC/MS	5	HP5890	HP-5972
		HP6890	HP-5973
			HP-5973
			HP-5973N
			HP-5973N
GC/MS/MS	1	Varian star	Ion Trap
GC/HRMS	1	GC:HP MS: Micromass	Magtic Sector
Spectrophotometer	1	Shimadzu	UV-VIS
HPLC	2	Shimadzu	UV-VIS
Fluoremeter	1	Abbot	Photomultiplier

- Two GC/MS were kindly supplied by Precision Electronique (Distributor of Agilent technologies in Tunisia) for the duration of the Games.

3- Collection of samples and transport

The collection of urine samples were carried out by medical doctors. These samples were collected in Tunis, Rades and Nabeul at the different sporting events and then came over night to the laboratory. A strict chain of custody was followed to ensure maximum security of the samples.

4- Sample distribution

The laboratory received 369 samples (221 from a males and 148 from females) during 14 days of the Games. Fig. 1 reflects the number of samples analyzed each day. The highest number of samples was 48 on the 6^{th} day.

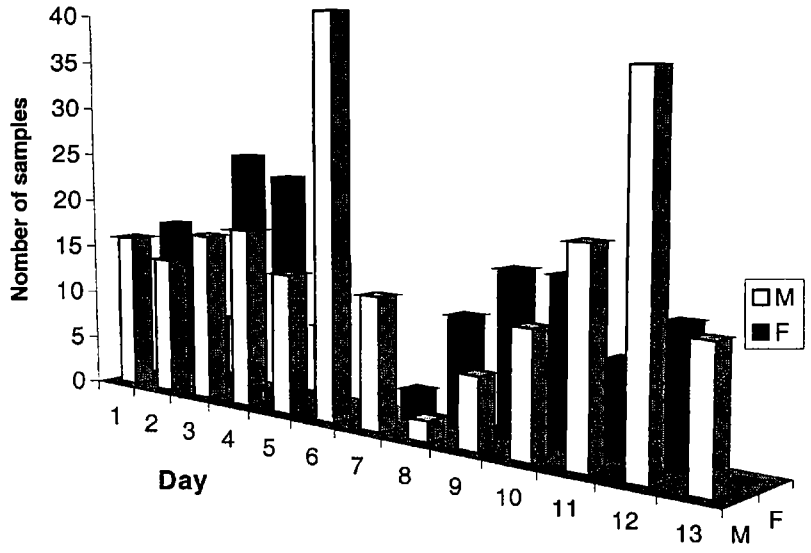

Figure 1. Distribution of samples (M: Male, F: Female)

5- Reception and pre-analysis

The samples arrived over night at the laboratory. First the seals of carry bags were checked, the code numbers of A and B samples were verified, noted and compared with those on the chain of custody forms. Stickers with the laboratory numbers were sticked on the A and B samples. These coded numbers were used after in the analytical process. The B samples were securely stored at -20°C in a lockable fridge in a separated room. The pre-analysis consisted of check of the volume and the determination of both pH and density.

Fig .2(A) shows the distribution value of pH of male and female samples. The most sample was characterized by a pH in the range of 4.5-5 (114 from male and 45 from female).

The distribution value of densities samples are illustrated by Fig. 2(B). It appears that 86% of samples have values ranging from 1.01 to 1.043 whereas 14% of samples have values lower than 1.01. However, it could be observed that the most of the samples have a density between 1.025-1.03.

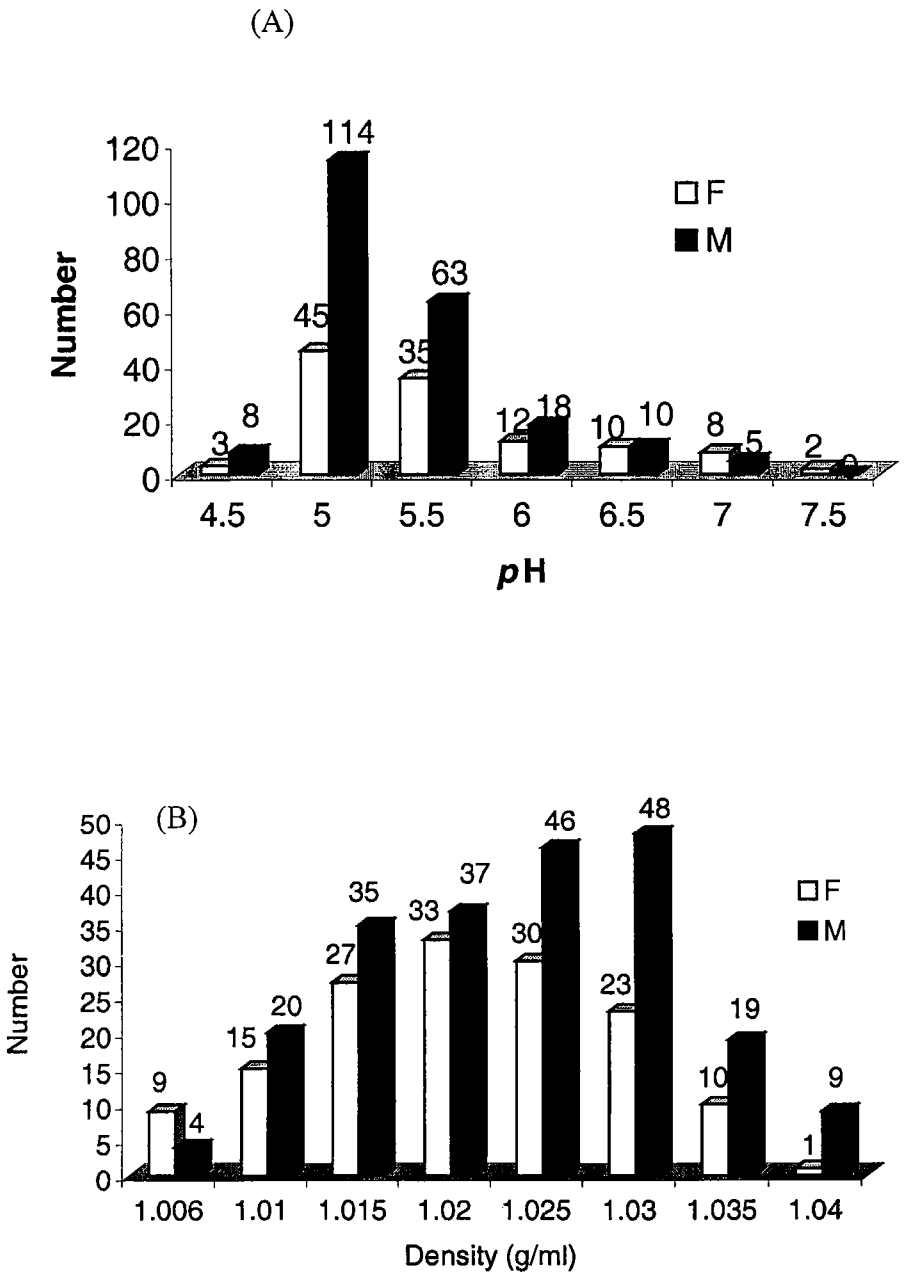

Figure 2. Distribution of pH and densities value of male (M) and female (F).

6- Results

During the 14th Mediterranean Games the laboratory had the opportunity to apply the analytical chemistry of testing 369 samples for over 250 compounds in 14 days with a response time of 24 hours for negative cases and 36 hours for positive ones. Seven samples were found to contain substances banned by the Medical committee(see table 2).

However, the analysis of these results shows that: An unusual sample which contains three prohibited substances, among them mesocarb, was found, one sample contains two banned substances while the remaining samples contain one substances each, a quantifications were performed on four of the seven positives results.

It should be pointed out that blind controls are not included in this report.

7- Conclusion

During the 14th Mediterranean Games held in Tunis in 2001, 369 samples were analyzed in 14 days from 19 different sporting codes. The highest number of samples on one day were 48, less than two per cent of the samples were found to contain substances banned by the Medical Committee of the COJM. This result is similar to the one reported for other Games.

Table 2. Result of positive A-B samples analyzed.

Day	Sample Nbr	Detected Substances	Sport
2	1505	19-Norandrosterone (M1=33.7 ng/ml) and lidocaine	Swimming
2	1514	3-OH Stanozolol	Halterophilie
2	1516	Terbutaline	Volley-ball
2	1529	Testosterone (T/E = 96.2), Methenolone and Mesocarb	Halterophilie
3	1543	19-Norandrosterone (M1 = 136.6 ng/ml)	Swimming
5	1618	Metabolite of cannabis (30.2 ng/ml)	Water-POLO
9	1714	Lidocaine	Athleticism

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