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DOPE TESTING DURING THE 1st INDO-PAK GAMES IN INDIA

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ABSTRACT

The study summarises the testing of samples for 1st Indo – Pak Punjab Games held from December 5-11, 2004 in Patiala, Punjab, India. Though it was an International event, it was decided by Chairman, Organizing Committee 1st Indo – Pak Punjab Games to perform testing in Dope Control Centre (DCC), Sports Authority of India (SAI), New Delhi, India. It was decided that any sample with an abnormal Testosterone/Epitestosterone (T/E) ratio & steroid profile would be sent for Carbon Isotope Ratio Mass Spectrometer (IRMS) testing abroad. The total numbers of participants were 630 from India & Pakistan, out of which 115 samples were tested. Out of 115 samples, 86 were males & 24 females. All essential equipments were used for testing as per World Anti Doping Agency (WADA) guidelines. The aim of the study was to analyze all the samples for prohibited substances. Out of 115 samples tested, 14 were found adverse analytical finding which showed percentage adverse analytical finding as 22.4%.

INTRODUCTION

The 1st Indo – Pak Punjab Games were held from December 5-11, 2004, in Patiala, Punjab, India. A total of 630 athletes from the states of Punjab in India & Pakistan took part in the games. For the 1st time testing for International Games was done for 1st Afro Asian Games in October 2003 in collaboration with Dope Control Laboratory (DCL), Mitsubishi Kagaku Bio-Chemical Laboratories (MBC) Tokyo (1). This was second time when testing for International Games was done in DCC, SAI. All the essential analytical instruments (Table-I) were used for testing as per WADA guidelines (2). However testing for glucocorticosteroids and erythropoietin was not done due to non-availability of facilities in the lab and the same was communicated to organizers. IRMS that is used to differentiate endogenous and exogenous steroids was not available onsite. It was decided that any sample with an abnormal T/E ratio & steroid profile will be sent for IRMS testing to Tokyo laboratory.

MATERIALS & METHODS

All chemicals and solvents were of HPLC grade or of analytical grade and were purchased from Merck (HPLC water, Methanol, Diethyl ether) and Sigma (β -glucuronidase from E-Coli, MSTFA, Dithioerythritol, Iodo-TMS). The methods followed were the same as used during First Afro Asian Games Testing in October 2003 when DCC got temporary accreditation from International Olympic Committee (IOC) in collaboration with DCL, MBC, Tokyo. (1).

TABLE: I SCREENING PROCEDURES & INSTRUMENTATION

Screening Procedures	Classes of monitored compounds	Instruments
Scr-1	Volatile nitrogen containing excreted free	2 GC-NPD:HP-5890&6890
Scr-2	Volatile and heavy volatile dope agents including Hydroxyethyl Starch (HES)	2GC/MSD:HP-5972&HP-5973
Scr-4A	Anabolic agents,few stimulants	2 GC/MSD:HP-5973
Scr-4B	Low conc of anabolic steroids	1 HRMS:Jeoul JMS-700
Scr-5 & 6	Diuretic and beta blockers	1 GC/MSD:HP-5973
Scr-7	Human Chorionic Gonadotrophin (HCG) (peptide hormone)	1 IMX (Abott) 1 ELISA ASSAY Johnson & Johnson
Others	(Not used, kept as backup)	1 GCQ

SAMPLE RECEPTION

The delivery of the samples to the laboratory was through authorized messengers around 11 AM. The number of samples sent to the lab in each delivery ranged from 10 to 35. The total number of samples received was 115.

RESULTS & DISCUSSION

The 1st Indo-Pak Games provided an opportunity to analyze 115 samples for over 200 compounds in 6 days. Urine volume ranged from 50 to 100 ml and pH measurement ranged from 5.0 to 7.5 with most of the samples showing pH values between 6.0 to 7.0. The measurements both in the field and at the laboratory were made using Bayer Combistics SG (pH 5 to 8.5, 0.5 unit scale). Out of 115 samples tested, adverse analytical finding was found in 14 samples (22.4%). None of the sportspersons requested for 'B' sample testing. Fast analytical results were communicated to the chairman of the medical commission of the games by secured fax and mobile phone. Official documented report was sent by courier to the chairman.

TABLE- II: STEROID PROFILE OF SPORTSPERSON TESTED DURING INDO – PAK PUNJAB GAMES

SNO	PARAMETERS	MEAN	SD	MAXIMUM	MINIMUM	SKEWNESS	SE
1	Androsterone	1909.62	1348.62	6426.45	168.78	1.23	146.27
2	Etiocholanolone	1570.52	1026.46	4900.00	93.41	0.92	111.33
3	Testosterone	23.59	29.43	155.58	0.88	2.33	3.19
4	Epitestosterone	20.97	17.20	83.37	0.80	1.42	1.86
5	DHT	4.54	8.31	44.37	0.00	3.08	0.90
6	5a3adiol	75.30	103.46	739.50	2.55	3.77	11.22
7	5b3adiol	219.08	313.63	1654.73	8.98	2.74	34.01
9	11-OHA	744.71	728.55	3620.67	33.94	2.18	79.02
10	11-OHE	240.03	451.28	2537.42	2.59	3.78	48.94
11	DHEA	53.84	27.16	98.12	5.09	-0.01	3.20
18	T/E	0.79	0.47	3.74	0.36	3.34	0.05
19	5a/5b	1.55	0.54	2.74	0.64	-0.10	0.06

Among various disciplines, the percentage adverse analytical finding was 78.6% for Athletics, 14.2% for Cycling and 7.1% for Wrestling. The details of the drugs found were 3-Hydroxy Stanazolol (2), 19-Nor Androsterone (5), 19-Nor Androsterone and 3-Hydroxy Stanazolol (4), 19-Nor Androsterone + Hydroxy Stanazolol + Epimethandiol + Mephentermine (1), 19-Nor Androsterone + 3-Hydroxy Stanazolol + Mephentermine+T/E (1) and 19-Nor Androsterone + Mephentermine (1). Table II shows steroid profile of the sports persons tested. Only one sample was found to be having T/E ratio more than threshold limit of WADA. However, the same sample also showed adverse analytical finding for Nandrolone, Stanazolol, Mephentermine. Hence sample was not sent for IRMS testing as decided prior to games that any sample with abnormal T/E ratio & steroid profile will be sent for IRMS testing. However, Steroid profile does not include data of adverse analytical finding samples. The steroid profile did not indicate any of the value above the range, which may require testing on IRMS.

CONCLUSION

It is concluded that doping control and analysis on a regular basis event in both Out-of-competition and In-competition is rather important in this area due to the high misuse of doping agents (22.4% adverse analytical findings) during this major

REFERENCES

- 1) Ueki, M, Jain, S, Ikekita, A, Beotra, A, Okano, M, Sato, M and Kaur. T: Dope Testing During The 1st Afro-Asian Games In India. J.sports Traumatology and Allied sports sciences, (5&6) 79-89, 2004.
- 2) World Anti doping Agency (WADA) International Standard for Laboratories Version – 4.0 (Aug 2004)