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CLINICAL AND IMMUNOLOGICAL CHARACTERIZATION OF HEP-2 PATTERNS (HEP-2 CIC PROJECT) – FREQUENCY OF NUCLEAR PATTERNS IN HEP-2 IFA DIFFER IN LABORATORIES WORLDWIDE

Topic: AS43 STANDARDIZATION OF DIAGNOSTICS

Authors: T. Martins[1], L.E. Andrade[1], HEp-2 CIC Project (www.anapatterns.org)[2]

[1]Federal University of Sao Paulo, Rheumatology Division, Department of Medicine, Sao Paulo, Brazil; [2]International Consensus on ANA Patterns, Autoantibody Standardizing Committee, International Union of Immunological Societies

Background and Aims

The International Consensus on ANA Patterns (ICAP) launched the HEp-2/CIC project aiming to collect information on methodology/reporting of HEp-2 IFA tests in laboratories worldwide.

Methods

Laboratories were selected according to geographical representation, expertise, scientific productivity, and/or recommendation by ICAP. Laboratories provided HEp-2 IFA results for all samples without disclosure of personal identification data. Patterns were converted into ICAP AC-codes in consensus with local participants.

Results

Most laboratories report AC-1, AC-2 and AC-3 patterns, but only 50% distinguished AC-4 and AC-5 (Table 1). The frequency of patterns across laboratories varies considerably, especially for AC-1. Of interest, laboratories not reporting AC-2 had increased frequencies of AC-1 and AC-4/5. Distinction between discrete nuclear dots AC-6 and AC-7 was reported by 62% of the laboratories; among nucleolar patterns AC-8, AC-9 and AC-10 by 33%; between nuclear envelope AC-11 and AC-12 by 42% of the laboratories (with frequency <2%); and between pleomorphic patterns AC-13 and AC-14 by 67% of the laboratories (with frequency <2%).

Table 1 –Five top nuclear patterns: frequency of laboratories reporting and the frequency of each pattern*

	Top five nuclear patterns					
	AC-1 (Homogeneous)	AC-2 (Dense fine speckled)	AC-3 (Centromere)	AC4 (Fine speckled)	AC-5 (Large speckled)	AC-4,5 (Speckled)
Laboratories reporting	100%	83%	100%	50%	50%	50%
Minimum frequency	6%	1%	1%	3%	1%	3%
Maximum frequency	64%	33%	10%	86%	40%	94%
Average frequency	28%	7%	4%	39%	7%	45%

* Data based on 464,161 HEp-2/IFA results from 42 laboratories in 30 countries and 5 continents

Conclusions

Competent-level patterns (AC-1, AC-3, AC-4/5) have larger worldwide inter-laboratory consistency than non-competent-level patterns. Differentiation of speckled (AC-4/5) nucleolar (AC-8/9/10) and envelope (AC-11/12) patterns are not available in many laboratories. The non-recognition of AC-2 caused a putatively misrepresented high frequency in AC-1 and AC-4/5 patterns in some laboratories. There is an urgent need for worldwide harmonization and training in the interpretation/reporting HEp-2 IFA patterns.