

**INTEGRATED MEDICAL DATABASE AND EXPERT SYSTEM
HEPAXPERT-II: AUTOMATIC INTERPRETATION OF
TESTS FOR HEPATITIS A AND B**

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The HEPAXPERT-II system

HEPAXPERT-II—the successor of HEPAXPERT-I [1]—is an integrated medical database and expert system that stores and interprets the results of routine serologic tests for infection with hepatitis A and B viruses. The following tests are included: hepatitis A virus antibodies (anti-HAV), IgM antibodies to the hepatitis A virus (IgM anti-HAV), hepatitis A virus (HAV) in stool, hepatitis B surface antigen (HBsAg) and antibodies (anti-HBs), antibodies to hepatitis B core antigen (anti-HBc and IgM anti-HBc), and hepatitis B envelope antigen (HBeAg) and antibodies (anti-HBe).

HEPAXPERT-II provides the following database functions: (a) screen input of patient's personal data (patient ID, surname, first name, name at birth, date of birth, sex), administrative data (department requiring the tests, date of specimen sample), and medical data (results of serologic tests where four qualitative results are possible: positive, negative, borderline, and not tested); and/or (b) automatic transfer of patient's personal, administrative, and medical data by connecting HEPAXPERT-II to a laboratory information system, a hospital information system [2], or an automated laboratory analyzer that provides and downloads the respective data.

After screen input or automatic transfer of data, HEPAXPERT-II automatically generates interpretive reports of the obtained serologic findings including an analysis of possible virus exposition, immunity, disease stage, prognosis, and degree of infectiousness. These interpretations are transferred to the department requiring the tests and help physicians explain what are often complex serologic findings.

Since February 15, 1991, HEPAXPERT-II has been routinely used at the Hepatitis Serology Laboratory of the 2nd Department for Gastroenterology and Hepatology of the University of Vienna Medical School (Vienna General Hospital).

Hardware and software

IBM-AT, PS/2 (minimum 80286 processor) or 100% compatible systems, 640 KB RAM, monochrome or color graphics monitor (CGA, EGA, VGA, HERCULES), PC/DOS or MS/DOS version 3.1 or higher or 100% compatible, one diskette drive (720 KB or more) and one hard disk (minimum 1.5 MB disk space for program and initialized database).

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References

- [1] Adlassnig, K.-P. & Horak, W. (1990) Routinely-Used, Automated Interpretive Analysis of Hepatitis A and B Serology Findings by a Medical Expert System. In *Proc. MIE'90*, Springer-Verlag, Berlin, 313-318.
- [2] Grabner, G. (Ed.) (1985) *WAMIS — Wiener Allgemeines Medizinisches Informations-System*. Springer-Verlag, Berlin.