

Some aspects in diagnostics of tumors of the liver

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ABSTRACT

The results of US-guided aspiration biopsy and immuno-fermentative analysis of definition of blood alpha –fetoprotein (AFP) at 120 patients with tumors of a liver are presented in the article. US-guided aspiration biopsy is a painless and exact method of diagnostics both good-quality, and malignant tumors of liver. By results of high level of AFP was diagnosed in 88, 6 % the patient with hepatocellular carcinoma and 82, 8 % with metastatic defeat of a liver. In all cases of good-quality tumors of a liver the test was negative. The method possesses with high specificity and may be served in differential diagnostics of neoplasm of a liver. In summary it is possible to note, that combined use of both methods on sensitivity surpasses each of them separately and is the optimal at diagnostics of tumors of a liver.

KEYWORDS: *alpha fetoprotein, liver tumors, US diagnostics, US-guided aspiration biopsy*

Diagnostics of focal lesions of a liver - one of the major problems of modern surgery. Despite of opportunities of the newest technologies, there are series of difficulties in differential diagnostics and well-timed revealing of malignant focal lesions of a liver. At revealing tumorous formation in a liver of the patient requires careful inspection. Diagnostics of neoplasms of a liver is difficult and demands application of a complex of actions: biochemical and immunological blood analyses, a ultrasonic, computer and magnetic-resonance tomography, research of blood-vessels of a liver (angiography), a puncture biopsy of a liver with the subsequent research of a received tissue [2,3,5]. Besides special methods of research at diagnostics of tumors of a liver it is given the valuable information by immunological and serological researches [1,2,4,6].

To early diagnostics, the control over treatment of malignant tumors and early detection their metastasis are widely applied radioimmune and immuno-fermentative methods of definition of tumor markers – materials of the proteinaceous nature which presence at biological fluids of an organism can testify to presence of a cancer. It is possible to count a theoretical tumoral marker what has high specificity and sensitivity in the attitude of a fixed kind of a tumor. As a rule, the beginning of strengthening of a tumoral marker in a blood outstrips clinical exhibiting a relapse and a metastasis of a tumor. The increased level of markers is found out already at the small dimensions of a tumor [4,6].

Sensitivity of modern radioimmune and immuno-fermentative tests - systems is quite sufficient for revealing excess of a fixed threshold level of a marker. Experience of use responsive and high specificity tests in medical practice has shown, that their introduction in practice considerably improves efficiency of surgical treatment of malignant neoplasms of a liver.

The modern data on duration of the non-tumor period survival rates more than 5 years and, accordingly, rising of a degree of quality of life of patients testifies for the benefit of that a determinative forecasting efficiency of treatment of malignant neoplasms of a liver, well-timed revealing a tumor is [5,6,7,8].

The purpose of research was definition of the significance of US-guided aspiration biopsy and immuno-fermentative analysis of quantitative definition alpha –fetoprotein (AFP) in blood serum of the person in diagnostics of neoplasms of a liver.

MATERIAL AND METHODS

In a basis of the present work analysis of results of inspection of 120 patients in the age of from 21 till 67 years (on the average 42 (32,54)) with focal formations of a liver lays. A method of screening was ultrasonic. After revealing focal formation defined a level of a tumoral marker - alpha-fetoprotein (AFP) in Serum of a blood. The final diagnosis was put after a puncture biopsy under the control of ultrasonic over the subsequent pathomorphologic studying. In the given research it was not surveyed such expensive diagnostic methods as CT, MRT, PET. A statistical analysis of the data carried out with application of a package of applied programs MS Excel. The data were considered authentic if the level of significance corresponded to a condition $p=0,05$.

CLINICAL RESULTS AND DISCUSSION

As have shown a findings of investigation, from total of focal formations (120 patients) in 64 cases malignant tumous - 35 initial cancer and 29 secondary lesion of a liver (colorectal cancer metastasises) have been revealed. In 49 cases hemangiomas, in 7 - adenomas of a liver have been diagnosed. The dimensions of a tumor varied from 1x1 cm up to 4,2x3,7 cm. By results of immuno-fermentative analysis, at 31 (88, 6 %; n=35) patient with hepatocellular cancer and 24 (82,8 %; n=29) with a metastatic lesion of a liver high level AFP in serum of a blood has come to light. The minimum dimensions of tumours at which rising level AFP was defined compounded, accordingly, 1,2x1,4 cm (an initial tumor) and 2,1x1,8 cm (the secondary lesion of a liver). At patients with hepatocellular cancer level AFP in serum of a blood has on the average made 450 (520, 750) a ng/ml and in 3 cases reached up to 1000 ng/ml. At patients with a metastatic lesion of a liver more low level AFP in serum of a blood was marked and on the average compounded 120 (80, 210) ng/ml. Also it is necessary to note, that concentration of an alpha-fetoprotein more than 50 ng/ml always coincided with presence of the given malignant tumors. In all cases of good-quality tumors (hemangiomas and adenomas) a liver immuno-fermentative test was negative (level AFP less than 15 ng/ml).

CONCLUSION

Ultrasonic is a method of screening. Ultrasonic scanning has high sensitivity in the attitude of revealing of tumors of a liver of the small dimensions (1sm), and aspiration puncture biopsy under the control of ultrasonic is a painless and exact method of diagnostics both good-quality, and malignant neoplasms which high performance is provided with an aim fence of a material with the subsequent pathomorphologic studying a punctate. The method of immuno-fermentative analysis of definition AFP of a blood has high specificity. At the existing tumoral locus, on the basis of quantitative differences in the contents of the conforming antigen - AFP, it is possible to

speaking about differentiation of a malignant tumour from good-quality. In serum of a blood of the patient with a good-quality neoplasm of a liver level AFP does not exceed norm. High concentration of given oncomarker almost always coincides with presence of the given tumors but if level AFP exceeds norm in some tens or hundreds times, differential diagnostics between an initial tumor and a metastatic lesion of a liver is declined aside hepatocellular cancer. In summary it is possible to note, that combined use of both methods - ultrasonic and immuno-fermentative analysis of quantitative definition AFP in serum of a blood of the person on sensitivity surpasses each of them.

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Некоторые аспекты диагностики новообразований печени

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Р Е З Ю М Е

Исследованы материалы аспирационно-пункционной биопсии под контролем УЗИ и иммуноферментного определения альфа-фетопропротеина (АФП) крови у 120 больных с очаговыми образованиями в печени. Тонкоигольная аспирационная пункционная биопсия под контролем УЗИ является безболезненным и точным методом диагностики как доброкачественных, так и злокачественных новообразований, высокая эффективность которого обеспечивается прицельным забором материала с последующим патоморфологическим изучением пунктата. У 88,6% больных с гепатоцеллюлярным раком и 82,8% с метастатическим поражением печени выявлен высокий уровень АФП в сыворотке крови. Во всех случаях доброкачественных опухолей печени иммуноферментный тест был отрицательным. Метод обладает высокой специфичностью и может служить для дифференциальной диагностики опухолей печени. Сочетанное использование иммуноферментного анализа и количественного определения АФП в сыворотке крови человека по чувствительности превосходит каждый из них в отдельности и является наиболее оптимальным при диагностике новообразований печени.

Ключевые слова: альфа-фетопропротеин, опухоли печени, УЗИ, биопсия под контролем УЗИ