Vaccination against Hepatitis B in patients on chronic hemodialysis

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Hepatitis B virus (HBV) induced liver diseases are of concern in patients on chronic hemodialysis (PCHD). Virus transmission occurs from patient to patient in hemodialysis units, through blood transfusion and dialyser reusing.[1] The incidence of hepatitis B surface antigen (HBsAg) positive PCHD in western countries is approximately 0.1% with a prevalence of 1.2%.[2] Today it is recommended to vaccinate all PCHD with recombinant HBsAg, for example Engerix B.[1] Uremic patients elicit a weaker response to HBV vaccine than the general population (70% versus 98%, even with the doubled vaccine doses for the former).[1] Patients on chronic hemodialysis showed a lower antibody titer and a shorter period of titer maintenance than the general population.[2] Therefore, vaccination is recommended for PCHD with greater vaccine doses than the general population (40mcg recombinant HBsAg given intramuscular at intervals 0, 1, 2, and 6 months plus a booster in case of decreasing antibody level).[2] The level of hepatitis B surface antibody (HBsAb) in blood is considered protective at more then 10 iu/l. There is an opinion that this level should be higher in PCHD, even above 100 iu/l. That level is reached in only 54% of PCHD.[2] The immunity is characteristically compromised in uremia, specially cellular immunity, with disruption of various T lymphocyte functions. Patients on chronic hemodialysis with a poor response to recombinant HBsAg vaccination have many immunologic alterations: reduced number of CD4 receptors on T lymphocytes and their reduced proliferative response to HBsAg exposure, lower number of receptors for interleukin (IL)-1b and the IL-6 on T lymphocytes, less quantities of IL-2, interferon-gamma, IL-4, and adhesion molecules in serum.[3] Many schemes and vaccination modifications for nonresponding PCHD are proposed today. The most frequently proposed modification is intradermal inoculation of HBsAg instead of intramuscular injection: intradermal inoculation of HBsAg at a dose of 5-20mcg in different intervals (monthly or weekly, in 5-12 attempts).[2,4] The resultant level of HBsAb is higher then that attained by intramuscular inoculation. Intradermal vaccination is cheaper due to the smaller amount of vaccine required.[4] The vaccination response in females was shown to be better than in males, diabetics and older PCHD (more than 65 years). Malnutrition (measured as concentration of albumin, prealbumin and predialysis blood urea nitrogen) has a negative influence on recombinant HBsAg vaccination response.[5]

Finally, a weaker vaccination response is expected in PCHD with diabetes, older age, and nutritional deficiency. In these patients, before beginning Engerix-B vaccination, one of the alternative vaccinating schemes for PCHD, especially the intradermal way of vaccine inoculation must be considered.

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Determination of sensitivity and specificity of breast tumor diagnosis by health care providers (Behvarz)

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Breast cancer is the most common cancer and the most important cause of death from cancer in women. The incidence increases with age, so that a 70-year-old woman is at risk for breast cancer 10 times more than a 40-year-old woman is. Prognosis of breast cancer depends on the rate of metastasis and as in most patients tumor is diagnosed in a stage that it has been spread; the early diagnosis in order to decrease the rate of mortality is of great importance. There a collection of factors associated with increasing risk of breast cancer including the pregnancy history, ovarian activity, history of nonmalignant breast tumors, family history, genetic factors, nutritional and endocrinal factors.[1] The 5 year survival rate has increased from 78% in 1940 to 93% in 1993 and it is believed that this fact is due to the early diagnosis.[2] Therefore any trial for early diagnosis and

treatment is of a great importance. The most common techniques for early diagnosis of breast cancer are self-examination (BSE), yearly clinical breast examination (CBE) by physician and mammography. Self examination increases the possibility of early diagnosis and consequently the survival chance of patients. Approximately 70-75% of breast masses are found by self-examination, but it is when the mass is 2.5 cm and in this size the probability of nodal metastases if 50%. In order to decrease the mortality rate diagnostic methods are required that are able to detect tumors in their smaller sizes and earlier stages. Mammography and sonography are the most common imaging methods for early diagnosis of breast tumors.[3,4] Self-examination should be performed in a regular monthly manner and it is recommended that all women over 35 have a yearly palpation by physician and yearly routine mammography is recommended to all women over 50.[1]

The present study was designed to find a practical strategy for detecting breast cancer in women especially in those who cannot refer to specialists due to some problems such as their geographical locations, economical obstacles, for example. For this purpose the ability of Behvarz in diagnosis of breast tumors (malignant and nonmalignant) has been compared with that of obstetricians. It is found that trained Behvarz are able to show a satisfactory ability in diagnosis of breast tumors, the breast tumor-screening program by Behvarz can be suggested to the health care system. This can be the first step in the screening of this disease. It should be mentioned that as Behvarz are in the front line of health care programs and are present in all health care centers, screening by them could be performed in a more widespread level.

For this purpose 2000 married women over 20 who were under the care of 17 health care centers in Kerman and Zarand, Iran were selected by clustering method. The assigned health care centers were selected randomly from all health care centers of the 2 cities. In the first step all Behvarz were trained with regards to the methods of breast examination, the screening of cases at high risk for breast cancer and other related diagnostic and paraclinical points. Training program consisted of theoretical sessions; workshop and showing films regarding the methods of breast examination. Two questionnaires were designed. The first was killed out by Behvarz and the other one by an obstetrician after their examination.

At first Behvarz examined all women referring to health centers and filled out the questionnaires based on their findings. Then all the examined women were examined by an obstetrician and questionnaires were filled out without any information regarding the data of the first questionnaires. Collected data was analyzed by Ep16 and by using descriptive statistics and Chi-square test. Sensitivity and specificity were calculated by using the related formula.

The range of gravidity in our subjects was 0-16 and the highest rate (18.9%) was for the gravidity of 9. The earliest gravidity age was 13 and the latest was 41. Of all subjects 1836 women had breast feeding and 164 women did not. From the total of examined subjects by 20 Behvarz, 170 cases had pathological signs (**Table 1**). With regards to age, subjects ranged from 29-98-years-old with a mean age of 41.2 and standard deviation of 15.7. There was a significant difference between different age groups in having pathological signs ($p<0.001$). The age group of 40-50 had the most rate of pathological signs.

With regards to weight, subjects were ranged from 35-99 kg with the mean weight of 56.9 and standard deviation of 11.5. The weight group of 51-60 kg had the highest rate (34.6%). Based on the results of this study there is a meaningful relation between weight and the presence of pathological signs ($p<0.001$). Sixty-three point eight percent of subjects had normal menstrual periods and there was no significant difference between these women with those who had abnormal menstrual periods in relation to the presence of pathological signs. From the total of examined subjects, 176 cases had the history of breast diseases in their first-degree relatives or further relatives in their families of which 9 persons had the history of malignant diseases and 167 persons had the history of nonmalignant diseases in their families. From 176 cases with positive history of breast tumors in family, 22 cases had pathological signs in their own examinations and all these 22 women had the history of nonmalignant diseases in their families. In regards to having pathological signs there was no significant difference between subjects with positive history of breast diseases in their families and those without any family history.

In all explained subjects, 10 cases had abnormal nipple discharge, of which 6 cases had milky or watery discharge. The prolactin level was measured in these cases and no abnormal points were observed. Four cases had bloody or infectious discharge but with normal smears. From the total of subjects 10 cases were referred for mammography of which one case was suspect. The report of biopsy showed this case was a fibro adenoma tumor. Mammography reports were normal in 7 cases and 2 cases have not referred for mammography yet.

In the physical examination by obstetrician, 169 women had pathological signs of which 162 cases had been diagnosed by Behvarz too. Seven women had pathological signs based on obstetricians diagnosis who had been missed by Behvarz and 8 women had pathological signs based on Behvarz reports, but were normal based on obstetrician's diagnosis. The comparison of positive reported cases by Behvarz and obstetrician showed the sensitivity of 95.8% and specificity of 99.6% for Behvarz diagnosis in this regard (**Table 1**). In other words in order to determine the role of Behvarz in the screening of breast cancer the results of examinations by obstetricians were considered as the golden standard and the sensitivity of Behvarz diagnosis was compared with it. According to the obtained results it was concluded that we can benefit very much from

Table 1 - Specificity and sensitivity of pathologic cases reported in physician's and Behvarzes' physical exams.

Physical report / **Behvarzes report**	**+**	**-**	**Total**
+	162	8	**170**
-	7	1823	**1830**
Total	**169**	**1831**	**2000**

P<0.001 Specificity- 99.6%, Sensitivity - 95.8%, Kappa - 0.95
+ Cases with pathologic sign
- Cases without pathologic sign

trained health care auxiliaries in screening of breast cancer patients. This fact is in agreement with the results of some previous studies in our country that have been mentioned in the report of Ministry of Health. Treatment and Medical Education with regards to the states of breast cancer screening in Iran.[5] The mentioned studies have been performed in Shiraz, Tangestan and Bushehr, Iran and all of them show the importance of clinical breast examination and the important role of Behvarz in this regard. In a study carried out in order to evaluate the diagnostic values of mammography, BSE and CBE, 1044 women were followed up for 6 years. From the total number of subjects in this study, 381 cases were at high risk, 204 cases were at moderate risk, 401 cases were at low risk and 58 cases were not at risk for breast cancer. Data were collected every 3-6 months and during this time 24 cases of breast cancer were diagnosed of which 12 cases were in the high-risk group, 4 cases were in the moderate risk group and 8 cases were in the low risk group. The mean age at diagnosis was 47 (32-82) with the range of 32-38 years. The fact shows the great importance of care programs especially in women who are at high risk.[2]

Finally based on several studies and also the Cancer Institute report, Iran Breast Cancer studies and surgerists opinions, the common age of breast cancer in Iran is lower than that in Western countries. Moreover mammography is not recommended in young ages as it does not have an additional role in comparison to clinical exams, and even in cases that mammography has been suggested as the best screening test, due to unavailability of CBE, clinical exams by trained health care personnel under sufficient supervision can be considered as a valuable screening test.

All these studies regardless of their main aims suggest that all women should be trained for self-examination and secondly there should be some facilities for all women to have a yearly clinical breast examination by physicians. Moreover all women at high risk and in high ages should be followed up by mammography yearly or every 2 years. Since in our society referring to physicians for clinical breast examinations is not possible for all women and since the sensitivity of Behvarz diagnosis was high in our study the possibility of using trained health personnel instead of physicians in breast examination programs is suggested. Considering the results of these studies we can benefit from trained Behvarz in the screening of breast tumors, since they are in the line of health care programs and are present in all health care centers around the country, so that all people can refer to them easily. The program of breast tumor screening by Behvarz in order to increase the level of women health in our society is highly recommended.

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Type of personality in Iraqi patients with duodenal ulcer

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Duodenal ulcer is a common disease and current estimates suggest that approximately 10% of the population have clinical evidence of duodenal ulcer at some time of their lives. Although *Helicobacter pylori (H. pylori)* infection and use of non-steroidal anti-inflammatory drugs (NSAIDs) are critical factors in pathogenesis, other pathogenic elements must come into play for ulcer disease to develop. The importance of psychodynamic factors in the genesis of peptic ulcer remains controversial despite decades of study. It is necessary to correlate psychodynamic factors with pathophysiologic mechanisms against essential permissive factors such as infection with *H. Pylori*, adequate acid, secretary mass, smoking and NSAID use.[1] Stress and personality type interact, and in one study cognitive psychotherapy appeared to increase ulcer recurrence, suggesting that a psychotherapeutic process may exacerbate ulcers, symptoms or tolerance of symptoms by focusing on issues such as pain, marital difficulties, depression or anxiety.[2] Type A personality is generally regarded as a behavioral pattern or response