

The age of onset of psoriasis and its relationship to smoking habits and stressful life events

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Psoriasis is a worldwide, chronic skin disorder that ranges in severity from a mild localized condition to a wide spread intractable type with a potential for systemic involvement. Although this disease is non-infectious, it however creates fear and misunderstanding in both health care providers and the public. The etiology of psoriasis is an enigma. A multifactorial pathogenesis including heredity, infection, stress and immunological factors have been proposed. Additionally, environmental factors are believed to interact with genetic predisposition in causing this disease. O'Doherty and MacIntyre¹ first drew attention to the strong link between smoking and palmoplantar pustular psoriasis in 1985. The aim of this study was to determine the age of onset of psoriasis and its relationship to smoking habit and stressful life events.

A cross-sectional case series study was conducted in the Department of Dermatology and Venereology Saddam Medical City Teaching hospital, Baghdad, Iraq for a period of 6 months from 1st December 2000 to May 31, 2001. A special questionnaire was designed by the investigators and included information concerning demographic characteristics, such as age, gender, age of onset, marital status, and occupation. Each patient was examined clinically, and the diagnosis was confirmed by a Consultant Dermatologist. Patients were classified by the age of onset into 2 groups those who have developed psoriasis at, or before the age of 40 years early onset psoriasis and those who have developed it later, late onset psoriasis. The mean (\pm SD) age of onset of psoriasis was 25.8 ± 17.3 years. The age of onset was earlier in females (22.9 ± 16.5) years than in males (27.3 ± 17.6) years. The peak age of onset was between 5-14 years. The association between the age of onset and gender was found to be statistically significant. Emotional factors could be the cause of psoriasis or the results of its presence,² which was confirmed, in the present study. Before the onset of psoriasis 72.8% of patients with a history of stressful life events had early onset compared to 27.2% who had a late onset. The association was found to be statistically significant this result was similar to other reported studies, Tordeurs et al³ in Belgium, Al-Abadie et al⁴ in the United Kingdom, while there was no significant association between the age of onset of psoriasis and stressful life events after the onset of psoriasis. The explanation for that is that stressful life events are regarded as a precipitating factor for psoriasis in those susceptible.

There was a significant association between psoriasis and smoking prior to the onset of the disease while after the onset there was no significant association and the

results were similar to what had been reported by Naldi et al⁵ in Italy.

We conclude that the age of onset of psoriasis was higher in males than females with stressful life events and cigarette smoking is being considered as a contributing factor.

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Deficiencies of physical examination among medical students

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In addition to history taking, the diagnosis of the diseases depends on physical examination. The physical examination is defined as detection of objective signs of disease through sight (inspection), touch (palpation) and hearing (auscultation). A sound physical examination depends on competency in its skills such as technique of examination, sign detection and interpretation. Grombie¹ documented that the end of a brief history and some subroutines of physical examination establish 88% of diagnoses in primary care. As well, poor examination may lead to missed, delayed and incorrect diagnosis with increased rates of morbidity and mortality.

Some authorities, erroneously, think that an exhaustive series of laboratory and radiological investigation or even the advanced biomedical and computer technologies can replace the individual doctor-patient encounter. Not only these technologies are expansive,

unavailable and time-consuming but also the sound diagnosis, at least up to the present time, still mainly depends on the doctors' clinical judgment and competence.

Literature dating back over 25 years has documented and commented upon deficiencies in the performance of medical students in the skills of the physical examination.² Unfortunately, this occurs despite the fact that books, teaching clinical methods and evaluation tests devote more space to clinching the signs. There have been many criticisms of the fundamental inadequacies of clinical teaching in medical schools. The teachers may presume that students, nevertheless, will process adequate skills of physical examination upon graduation. Multiple instructors, close supervision and a low student staff ratio are necessary elements for a successful clinical instruction. All these factors are, nowadays, deficient in our schools. Having been undetected during the training programs, the defective skills of examination definitely persist and prevail among the future doctors. The aim of the present paper was to discuss the errors and deficiencies of the skills of physical examination performed by the final medical students in the internal medicine department.

The subjects of our study were the students of the final year of Medical School, University of Bahr Elghazal (UBG), Khartoum, Sudan, during the academic year 2000 to 2001. The clinical phase of the 6 year curriculum of UBG is taught in the 4th, 5th and 6th years. By the 6th year, the students are supposed to master the basic clinical skills including those of physical examination. During the year the author was conducting a weekly teaching clinical round for 3 groups (in rotation); each group contained 15 students. The usual format of our rounds is that 2, or 3 students are required to perform full history and physical examination for 3 long cases before the start of the group (such as not attended by the instructor).

The aim of my study was to assess the basic skills of physical examination through detection of errors, which are divided into 4 groups. 1. Errors of technique: Poor ordering and organization, improper manual techniques or use of instruments. 2. Error of omission: Not performing part of the examination. 3. Errors of detection: Missing a sign that is present or reporting detection a sign that is not present. 4. Errors of interpretation: Failure to understand the meaning of an identified sign in pathophysiological terms, lack of knowledge or use of confirmatory signs.

For the purpose of this study I asked each one of the 45 students to conduct a physical examination in 20 minutes. I attended the whole of the examinations. The patients were co-operative, previously unknown to students, and with clear-cut physical signs. The 45 patients included respiratory cardiac, abdominal and neurological cases (10-11 cases for each). I designed an 18-item checklist, which are the essential components of a physical examination of the cardiovascular, respiratory

abdominal and nervous systems. 1. General: Pallor, cyanosis, jaundice, physique, and dyspnoea. 2. Cardiovascular: Pulse, blood pressure, jugular venous pressure, palpation and auscultation of praecordium. 3. Chest: inspection, palpation, percussion and auscultation. 4. Abdomen: Inspection, palpation, percussion and auscultation. 5. Nervous system: Higher cerebral function, cranial nerves, upper limbs and lower limbs. Each item was scored 0,1 or 2 (for a maximum possible score of 36): 0 - Indicated an overall poor performance, omission of part of examination; failure to detect significant findings or invent signs that are not present. 1. Indicated a minimally acceptable performance with minor deficiencies and errors (but not serious mistakes). 2. Indicate excellent performance.

Of the 45 students participated in the study 7 (15.6%) scored above 22 (the high-scoring group), 12 (26.6%) scored 18-22 and 26 (57.7%) scored below 18 (the low-scoring group). The high-scoring groups were penalized for errors such as missing an enlarged kidney, failure to qualify cutaneous sensation and omission of reinforcement of diminished tendon reflexes. The low-scoring group were penalized for mistakes such as missing splenomegaly and omission of an important examination area; such as abdominal palpation or cardiac auscultation. The errors noticed in 3 or more students were classified into techniques, omission, detection and interpretation errors.

Errors of technique. Liver palpation, fluid thrill, tidal percussion, blood pressure measurement, use of bell of stethoscope, palpation of trachea, palpation for chest expansion, improper distance to check visual acuity, use of irritant substance to check olfactory nerve, assessment of tone in lower limbs, power of trunk muscles, improper limb positioning for tendon reflexes, co-ordination.

Errors of omission. Inspection of genitalia, palpation for kidneys, abdominal auscultation, whispering pectorilougy, left parasternal heave, examining the chest posteriorly, peripheral pulses, examination of 9th and 10th cranial nerves, assessment of vibration and position senses, maneuvers and postures to augment murmurs.

Errors of detection. Minimal splenomegaly, abdominal masses other than spleen and liver, liver shrinkage, thrill outside the apex, diastolic murmurs, decreased chest expansion, mild-grade murmurs, pleural rub, mild hypertonia or paresis, conjugate and disconjugate ocular movements and sensory changes.

Errors of interpretation. Confirmation of palpable liver or spleen, differentiation between atrial fibrillation and extrasystole, elevated external and internal jugular pressure, the less moving lung, breath sounds and ascites versus obesity.

Our study documented an overall hypo-competence in the physical examination as an important clinical skill. All types of errors in physical examination were frequently observed among our students. A previous

study by the author among the same students indicated also a marked deficiency in the skills of history taking.³ Error of techniques are mainly due to poor or absent monitoring at the start of clinical training. Then the students incorporate the defected techniques into their future practice. The deficit of staff and the large size of the students groups per one instructor make monitoring of the student a difficult task. Many students simply are not aware that their techniques are poor as no one has observed and corrected them. Some teachers concentrate on detection of sign claiming that proficiency in techniques does not necessarily lead to improvement in ability to detect signs. There are possible solutions. An easy access to well-trained assistants can help frequent monitoring of students especially during early practice. The students can benefit from repeated peer physical examinations (on each other) to help them familiarize with examination techniques.

Omission is a common error. The most frequent reason is failure to memorize the sequence of physical examination (so the student does not know what to do next). The students may feel discomfort when examining areas like external genitalia and breast, and when dealing with acutely ill patients. Some of the examination maneuvers are considered "unnecessary" by the students. They neglect examining areas that do not produce the symptoms. A common example, is missing a symptomless tropical splenomegaly in patients mainly complaining of chest pain. The preset time limit may lead to omission of some of the examination maneuvers. There is a bad habit in some teachers of quickly and uninterestingly palpating the abdomen or auscultating the heart when both systems are normal, thus, growing the seed of omission in their students. With experience, the students will be in a better position to easily define the involved organs and then have a lesser rate of omission. A serious and common type of omission is failure to complete the physical examination by detecting relevant signs outside the involved system. Unless directly guided, many students do not examine lymph nodes or pallor in a patient with splenomegaly, or peripheral signs of thyroid disease in patients with goiter. The presence of a checklist specifying the examination maneuvers to be performed, especially in early training, will significantly decrease the omission rate. The time limit of physical examination must be adequate and appropriate to the students' level of training.

A large proportion of errors in physical examination results from defected sign detection and interpretation. Although clinical instruction in many schools are biased to sign detection, the students are deficient in this skill. The students tend not to examine properly the body areas that do not produce the main symptoms. Erroneous and hurried techniques, rarely, produce signs! Equivocal findings are a rich source for errors and confusion. The students usually react by tedious repeating the

performance of the procedure and then causes intolerable discomfort to the patients. Experience and self-criticism will guide the students to ignore or to take the equivocal signs. Errors of detection may result from the hurried tendency of some students to make a diagnosis without good evidence. They invent physical signs to fit an erroneous diagnosis. For example on seeing a goiter, elude signs of hyperthyroidism, or on feeling a collapsing pulse, they 'hear' the diastolic murmur of aortic regurgitation, forgetting the other causes of collapsing pulse.

There are many reasons for the deficient examination skills among our students; some of them were discussed above. The students are heavily loaded with the subjects of pathology, microbiology and pharmacology in the 4th year leaving a scanty space and interest for clinical instruction. The clinical instruction suffers some deficiencies. Some instructors based their rounds on the student presentation in the office with only a short period at bedside to verify some of the data. This pattern of teaching leads to absence of direct and meticulous observation and then detection and correction of errors. In fact, most of the times, an elegant presentation may follow poor physical examination or interview. The presentation based teaching may produce impromptu lectures consuming the time originally allotted to teaching the clinical skills. Some instructors may neglect discussing the pathophysiological meanings of abnormal findings. They discuss the signs in terms of differential diagnosis and disease entities. Some instructors are not experts in clinical teaching and may be hurried clinicians whose main interest lies elsewhere. The staff deficit versus the rapidly increasing numbers of medical students leads to allocating very large numbers (up to 20) of students to one instructor. It was found that there is a close relationship between good performance in physical examination and the small size of the student group. Regular rotation of groups and use of all class can minimize the bias due to the difference in skills of individual teachers. The bias due to differences in skills of individual teachers can be minimized by regular rotation of groups and use of all-class intensive teaching programs in clinical skills for students commencing clinical medicine.⁴ There is difficulty in obtaining appropriate hospital patients for the increasing number of students. Schools may need to change the curricula to get the use of the community-based health units. No significant difference was found between skills obtained in community and hospital-based units.⁵

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Behind the screen. *PubMed intricacies*

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United States of America National Library of Medicine (NLM) [[http:// www.nlm.nih.gov/](http://www.nlm.nih.gov/)] is an excellent resource center for literature on medicine and allied fields. It includes free MEDLINE (<http://www.index.nlm.nih.gov/databases/freenedl.html>) access, NLM publications, research and special information programs for medical researchers. This letter explains some of the behind the screen concepts for searching medical literature on PubMed. I will try to explain and give the basic understanding of what happens when you look for a term in Basic Search, or how a Clinical Query is carried out, or how the "See Related Articles" function compares articles for similarity on PubMed. This will give the readers a broader understanding of basics of search strategy used by the PubMed search engine. This will also help the medical researchers to be more accurate and productive in performing their medical literature search. I have listed the internal working of PubMed search engine in a stepwise fashion as follows: 1. When you type in the query word in the search box, PubMed looks at its index to see whether the term is a MeSH (Medical Subject Heading) heading. If so, it searches the MeSH term OR the text word in the MeSH list. 2. If the word is not a MeSH term, it compares it to 2 translation tables until a match is found. Thus, a search on bleeding looks in the tables finds the standard MeSH term hemorrhage, and a complex search is created automatically: ("Hemorrhage" [MeSH Terms] OR bleeding [Text Word]). 3. If PubMed cannot find a MeSH equivalent, it looks at the Journal table to see if there is a journal by that name. A search on cell proliferation finds the journal Cell Proliferation, since there is no MeSH phrase with these 2 words. 4. If PubMed cannot find a journal, it looks in a list of phrases. For example, the phrase heart attack is automatically translated to myocardial infarction. 5. If PubMed cannot find a phrase, and one of the terms has a one- or 2-letter word after it (jones pa), PubMed tries the Author index. 6. If PubMed cannot find an author, it then tries variations on the word order. 7. As a last resort,

PubMed takes every individual word and runs them through the translation table, phrase list, and author index.^{1,2} Function "See Related articles": This function in PubMed is useful for conducting a rapid literature search. What is PubMed doing when it searches for related articles? Contrary to what might be expected, PubMed does not run a search at the time you click See Related Articles. Instead, the database periodically goes through the algorithm outlined below and generates a list of all the articles related to each citation. Then when you look for Related Articles, it uses this precompiled list. The algorithm compares the similarity in title, abstract, and MeSH terms for the article in question to all the other articles in PubMed. In a step-by-step fashion, PubMed does the following: 1. Stop words are eliminated. 2. A limited amount of stemming is carried out. 3. Words are classified into 3 categories: text word, title word, and MeSH term. a. Words in the abstract are classified as text words. b. Title words are classified as both text and title words. c. MeSH terms are placed in that category and MeSH terms with a subheading are classified under the generic term and the term/subheading pair. Medical Subject Heading major terms are classified both as MeSH and MeSH major term. 4. Each word is assigned a global weight, depending on the number of articles with that word and how important the word is in determining relationships. Global weight is higher for rare words, lower for common ones. 5. Each word is assigned a local weight, depending on how often it appears in the particular article. 6. The similarity between the article and every other article in the database is computed: a. The formula (local weight x local weight x global weight) is calculated for all terms. The 2 documents have in common. b. The product of the lengths of the 2 documents, producing a vector cosine score divides this product. 7. A list of articles with the highest score (those which are most similar) is compiled and saved.^{1,2}

Searching clinical queries. The Clinical Queries are really just pre-written searches, using MeSH terms and subheadings, on research studies and methodology. This allows you to do a quick search using terms with which you are familiar (therapy, diagnosis, etiology, prognosis, sensitivity, specificity). The expanded phrases below show the syntax that PubMed adds to your term when you run a Clinical Query. These are MeSH terms and subheadings that narrow the search to the general area of therapy, for example. In each case, the entire phrase is connected by Boolean AND to the term(s) you are searching for. Parentheses are used to show the ordering of elements in the search syntax; brackets are used for the [no explosion] parameter when used with MeSH subheadings. To make the syntax somewhat more understandable, I have put each phrase on a separate line, but in reality they are complete phrases. As an example, when searching for the word gentamycin, with a focus on therapy and sensitivity, the syntax would begin: Gentamycin AND (publication type randomized controlled trial for example).