
Selected Summaries

Early Predictors of Severity of Acne Vulgaris

[Lucky AW, Biro FM, Simbarti LA, Morrison JA, Sorg NW. Predictors of severity of acne vulgaris in young adolescent girls: Results of a five year longitudinal study, *J Pediatr* 1997; 130: 30-39].

Acne vulgaris is the most prevalent skin disorder in adolescents and young adults but surprisingly little is known about its natural history and it is difficult to predict which individuals are prone to severe disease. This longitudinal cohort study was planned to determine the predictors of later development of severe facial acne in early pubertal girls.

Eight hundred and seventy one girls (439 black and 432 white) from public and parochial schools, representing diverse socio-economic groups, were recruited for this study, as a part of the National Heart, Lung, and Blood Institute's Growth and Health Study from 1987 through 1991. The annual examinations included age, date of onset of menarche, severity of acne and anthropometric measurements. Serum levels of sex steroid hormones testosterone-estrogen binding globulin (TEBG) were measured at 1,3 and 5 years of the study. Facial comedonal and nodular inflammatory lesions were recorded as mild (up to 10 lesions), moderate (11-25 lesions) and severe (more than 25 lesions) by one trained observer. Lesion counts were assigned numeric values of 5 for mild, 17 for moderate and 25 for severe disease. Final analysis was based on severity of acne recorded at fifth year of the study. Regression models were fitted by means of the generalized estimating equation of Liang and Zeger to

longitudinally compare the mean acne scores and the level of sex steroid hormones and TEBG among the three acne severity groups. Date of menarche was not known for 186 girls and hence, they were excluded from the study. Only 369 of the remaining 685 girls had hormone and menarche as well as acne data, at year 5. All analysis were rerun, excluding the girls who were receiving prescription treatment for their acne. The results were similar to those obtained from the total sample of girls and thus results based on total sample were analyzed.

It was shown that there were significantly more comedones at early ages in the girls who later developed severe acne. These girls had significantly more comedones across all ages ($p < 0.0001$) as well as across all menarchal stages ($p < 0.0001$). It was also noted that the girls who had severe inflammatory acne at year 5 not only had more inflammatory but also had more comedonal lesions from -36 to +36 months from menarche than girls who subsequently had mild acne ($p < 0.0008$). The girls who had mild acne had significantly later menarche than girls with severe acne (12.5 ± 1.1 vs 12.2 ± 1.1 years). It was observed that at most points before and after menarche, even at a time when the girls had mild acne, there were significantly higher levels of dehydroepiandrosterone sulphate (DHEAS) and somewhat higher levels of testosterone and free testosterone in the girls destined to have severe comedonal disease. The other studied sex steroid hormones (estradiol, progesterone) and TEBG revealed no differences among severity groups. It was thus concluded that early development of comedonal acne may be one of the best predictors of later, more severe disease and

that adrenal hormone DHEAS played an important role in the initiation of acne.

Comments

Acne vulgaris is undoubtedly the most common dermatologic pathology in adolescents, especially girls, and despite benign nature, often leaves profound psychologic and scarring sequel. It is surprising to note that hardly anything is known about the natural history and early predictors of this so common dermatologic condition, affecting the adolescents universally. It has been shown previously that acne may be the first sign of pubertal development and that DHEAS is associated with the presence of acne in the premenarcheal girls(1). However, this is perhaps the first prospective study of *Acne vulgaris* in the preadolescent girls which has tried to establish who is likely to get severe acne in future, so that therapeutic intervention may be instituted at an earlier stage to prevent unwanted psychologic or cosmetically unacceptable sequel. The most important observation in this study was that mean lesion count of the comedonal or inflammatory lesions, whether mild or severe, was much higher in girls who later developed severe *Acne vulgaris* as early as 2-3 years before menarche. The conclusion that number of early acne itself may be the best predictors for the future severe acne may be quite important for selecting subjects who should have early therapeutic intervention for this usually medically ignored and undertreated condition for prevention of later severe, scarring disease.

Conventionally the severity of *Acne vulgaris* is described in terms of nodulocystic lesions, severe scarring or disfiguring lesions rather than the number of lesions(2). The authors have defined severe disease as more than 25 lesions, which may actually not be severe enough to leave any

long term disfiguring sequel. Using this criterion might jeopardize comparability with similar studies, but since the subjects in the report were recruited at an earlier stage (and therefore had much less severe disease according to conventional criterion), grading severity at the time of recruitment would possibly have been inadequate using conventional criterion.

The significance and scientific explanation for the observation that girls with mild comedonal acne attained menarche significantly later (average 4 months) than girls with severe disease remain to be elucidated. The elevated level of DHEAS in early pubertal girls who later develop severe disease and higher levels of other sex hormones in association with severe disease have been well established by other workers before(3), but their utility in a primary care clinical setting is doubtful. In essence, the primary care physician should concentrate on recognizing the early comedonal lesions and closely follow up those with more numerous lesions at an earlier age so that therapeutic intervention could be offered to them at an earlier stage, as and when needed.

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Pediatricians: Get Ready for the Web

[Fikar CR. *The Internet and the Pediatrician: Should there be a connection. Clin Pediatr* 1996; 35:229-236.]

Internet is an extensive network of inter-linked computers storing a vast and varying quantity of information. The obtainable information may be of potential relevance to a pediatrician in his clinical practice and academic pursuit. The present article reviews the literature on Internet to discover the sources of information and communication utilities existing in this networking that might be of importance to the pediatric health care provider.

Internet originated in 1969 as a military network of four computers called the ARPANET founded by the US defence department. The original purpose was to serve as a reliable communication tool in the event of a nuclear attack. This formed the backbone of a standard method of communication among disparate computer systems and was known as Transmission Control Protocol/Internet Protocol (TCP/IP). The National Science Foundation in 1980 connected its five computers through TCP/IP allowing its access to the researchers for academic work and termed it NSFNET. The networks of NSFNET, ARPANET and NASA were then linked up. The present day Internet is compared of this basic core connected with other local, state, federal and international computers and their networks. This network has presently 10,000 interconnected world-wide computer networks, 5 million computers and 20 million users. A personal computer, a modem and the required software is all that is essential to link to Internet. This can be achieved through a dial connection (provided by VSNL in India) on charge basis.

The facilities available through Internet include E-mail (electronic mail), Listserv, FTP (file transfer protocol), Telnet and WWW (world wide web). *E-mail* is an extremely rapid method of sending messages which may include text in the form of case histories or references and image such as clinical photographs or radiographs, etc. *Listserv* is an extension of *E-mail* facility and provides access to various discussion groups on a particular subject. Examples of such discussion groups include those on autism/developmental disabilities (LISTERV@SJUVM.STJOHNS.EDU), neonatal intensive care (listproc@u-washington.edu). Pediatric emergency medicine (listserv@brownVM.Brown.edu), and Pediatric intensive care unit (Listproc@its.mcw.edu).

FTP (file transfer protocol) is a method by which the files of a remote computer can be accessed and transferred to one's own computer. For example, the Center for Disease Control at Atlanta has enabled free access to their weekly mortality and morbidity reports through FTP. *Telnet* allows a computer to log on to the system of another computer and use its data. One can browse through medline or other medical databases by using this facility. World wide web (WWW) is one of the newest and user friendly services of the Internet. This facility can only be accessed with special software such as mosaic, cello, netscape or lynx. Through the hypertext system of the WWW, documents or even images may be obtained. Hypertext transfer Protocol (HTTP) is the Internet protocol for transferring hypertext documents. Several WWW sites with pediatric information are available. Uniform Resource Locator (URL) is the special address system used by the WWW to locate specific documents. A few pediatric WWW sites and their URL addresses are summarised in *Table I*.

TABLE I-Addresses of Interest to Pediatricians

Name of site	URL address
CDC	http://www.cdc.gov
Neonatology on the web	http:// external, csmc.edu/neonatology
Pediatric oncology	http://cancer.med.upenn.edu
PEDINFO Home page	http://www.lhl.uab.edu:80/pedinfo
Pediatric points of interest	http://www.med.jhu.edu/peds/neonatology/poi.html

Internet may provide communication among pediatricians, patients and their families. WWW with its many pediatric access point has opened up new vistas of information sources. Text and images can be sent around the world for specialist consultation. Parent/patient education sites are also available.

Comments

The mass suicide of 39 Heaven's Gate cult members and the Pooja Bhatt controversy has generated a lot of curiosity and frenzy regarding the Internet(1). These should not act as a dampener to the general spirit of enthusiasm and reassurance is mandatory to affirm that all that is associated with Internet is not trash.

Besides medline, which is available free on www.medscape.com, several other data bases such as embase, biosis and scisearch can also be looked at for biochemical abstracts. The medical world search engine site at <http://pride-sun.poly.edu> has a thesaurus of more than 5 lac medical terms to look up for medical resources(2/3). Text and images can be speedily transported around the world for fast specialist consultation. Experience and opinions of many professionals can be called by quering an appropriate Listserv group. The recent advances are immediately available by few clicks of the mouse. Apple has set up convomania (<http://www.mania.apple.com>), a website designed for children who are

seriously sick or disabled. All this and much more is available on the net, making a good case for its availability to both research oriented and clinically minded pediatricians in this country.

In India, Internet access is available only at the four metro cities, Bangalore, and Pune. Recently, the Department of Telecommunications (DOT) has proposed a dial-up to Internet access numbers from cities and towns that don't have direct access, using a 099 prefix. This means bringing all cities and towns in India on the Internet map(4). The main obstacle in obtaining an Internet connection is the cost factor involved. India can boast of only 30,000 Internet connections, most of them belonging to the business houses. VSNL demands a whopping sum of Rs. 15,000 per year to allow a limited use of Internet, *i.e.*, only for 250 hours. Another bad news is that VSNL is unlikely to promote its shell facility for students, which used to provide limited Internet access for Rs. 500/- per year and Rs. 5/- per hour usage charges. Notwithstanding the cost and infrastructural constraints. Internet promises to bring a whole new world full of information for the netizens. The coming years may witness an unprecedented rise in the use of Internet for benefit of the tiny tots and their health care managers. Pediatricians should view the Internet as an information source to be placed alongside textbooks, phone consults, and print publications, but they

should understand the nature of Internet publishing which may occur without a peer review or undergoing editorial process(5).

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