

The Status of Internet Access in Adult Patients with Atopic Dermatitis in Japan

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The Internet has provided open access to health- and disease-related information for people with chronic diseases. Atopic dermatitis (AD) is mostly chronic, and the treatment of AD often requests some self-management such as skin care. For this situation, adult AD patients may have a motive of obtaining information on AD from various sources such as the Internet. Although the status of Internet access among AD patients has not been thoroughly investigated, knowledge about this status may be useful to understand AD patients in primary care. We studied the actual status among 62 adult Japanese outpatients with AD (male:female = 29:33; mean age [\pm s.d.]: 27.8 \pm 7.9 years). All 62 patients owned cellular phones, while 51 subjects (82.3%) owned personal computers (PCs). Internet web-site information on both general health and AD was more commonly accessed via PCs rather than cellular phones, but the access rates via PCs were only 35.3% among all users of PCs. When AD patients assessed the extent of credibility of web site information on AD on a scale of 0 to 100 points, it was at best 52.4 \pm 19.8 points. Moreover, both the duration and severity of AD had a positive influence on the credibility of information on AD. These results suggest that Internet access is not common and the information is not necessarily credible among adult AD patients in Japan, and that more consideration is needed for the Internet to become a powerful and vital source to support health care for AD. ———

personal computer; cellular phone; mobile phone; disease duration; severity

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Atopic dermatitis (AD) is not a rare disease, but the causes remain unknown (Nicol 1990; Spergel and Paller 2003). Although medical treatment with topical steroids and tacrolimus, often with the oral use of antihistamines, is available (Lupton et al. 1982; Van Der Meer et al. 1999; Herman and Vender 2003; Nakahara et al. 2004; Reitamo et al. 2005), AD is mostly chronic. Some self-management such as skin care is also encour-

aged in the treatment of AD (Furue et al. 2004; Niemeier et al. 2005), and AD patients may have a motive of obtaining information concerning the management of AD from various sources.

Recently, the Internet has provided people with open access to health- and disease-related information (Murero et al. 2001; Giménez-Pérez et al. 2002; Ikemba et al. 2002; Kalichman et al. 2002). Accordingly, the Internet can be viewed as

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an effective way of providing health care information to people with chronic diseases. One of the major concerns of health and medical professionals is the status of patients' access to the Internet. There have been several reports on this (Murero et al. 2001; Giménez-Pérez et al. 2002; Ikemba et al. 2002; Kalichman et al. 2002), but it should be assessed under different medical conditions. We are not aware of any study evaluating the actual status of Internet access among adult AD patients.

SUBJECTS AND METHODS

Between 2003 and 2004, we examined the status regarding Internet access among sixty-two adult AD Japanese outpatients (male:female = 29:33; age range: 19-50 years old, mean age: 27.8 ± 7.9 [s.d.] years) in a primary care setting (rate of participation in this study: 100%). All patients had graduated from at least high school. We investigated Internet accessibility via a personal computer (PC) and/or a cellular phone (CP), access to web site information, the credibility of information and the relationship between the status of AD and access. The following items were assessed by a self-rated questionnaire: 1) the prevalence of having a PC and/or CP, 2) if PC/CP owners, the experience (at least 1 time in the last week) of accessing general Internet web sites through PC/CP, 3) similarly for web sites on general health, 4) similarly for AD, and 5) regardless of the experience of Internet access, the degree of credibility (on a 100-point scale) of web site information on AD. Patient demographics concerning age, gender, and the duration and severity of disease were also collected. The severity of AD was diagnosed by a specialist with more than 10 years' experience, according to criteria published elsewhere (Furue et al. 2004). Briefly, the severity was classified on the basis of the following skin signs: mild, xerosis having the slight erythema and scale; moderate, exanthem having the erythema, scale, papule and scratch mark; and severe, exanthem having swelling, edema, lichenification, marked papule, vesicle, erosion, prurigo and remarkable scratch mark.

The study was designed according to the Declaration of Helsinki, and all data were treated anonymously. Continuous and discrete variables were compared using Student's *t*-test and Fisher's exact test, respectively. The correlation between continuous variables was analyzed using Spearman's rank correlation. Differences were considered significant at $p < 0.05$.

RESULTS

Patient data are presented in Table 1. Of the 62 subjects, 51 (82.3%) owned PCs. All PC owners had ever accessed Internet web sites during the last week. On the other hand, all 62 subjects (100%) owned CPs, and 34 had accessed the Internet, but with significantly less frequency when compared to PC owners. There were no significant differences in the mean age, gender ratio, or the duration and severity of AD between PC and CP owners. Access to web site information on both general health and AD was significantly higher in PC owners than CP owners.

Among all AD patients, the credibility score of web site information on AD via PCs was significantly higher than via CPs (52.4 ± 19.8 vs. 41.7 ± 23.7 points). The credibility of information on AD via PCs was positively related to both the duration and severity of AD ($r = 0.30$, $r = 0.30$, respectively), whereas it was not related to age and gender. In contrast, the credibility of information on AD via CPs was not related to any of the above items.

DISCUSSION

We determined the actual status of Internet access outlined among adult AD patients in Japan. Among the patients, there was a high rate of ownership of devices such as PC/CP to access the Internet. Age seems to be one of the determinants of Internet access (Giménez-Pérez et al. 2002). Our results of ownership of PC/CP may reflect AD occurring at a relatively young age, in addition to the recent widespread use of PC/CP in Japan.

Greater usage of PCs to obtain web site information about both general health and AD was observed compared to CPs, suggesting that PCs are a more suitable information tool for patients. CPs appear to be more immediate and convenient for obtaining information. However, for example, PCs transmit a lot of information on a larger screen, and may provide a higher quality of content at a deeper level of understanding than CPs. These factors may lead to the greater usage of PCs to access information, and moreover, may

TABLE 1. Demographic data on AD patients included in the study.

| Total number | All patients <i>n</i> = 62 (%) | PC owners <i>n</i> = 51 (%) | CP owners <i>n</i> = 62 (%) |
|----------------------|-----------------------------------|--------------------------------|--------------------------------|
| Age (years) | 27.8 ± 7.9 | 27.9 ± 7.9 | 27.8 ± 7.9 |
| Gender (male/female) | 29/33 | 24/27 | 29/33 |
| Duration of AD | | | |
| 0-9 years | 5 (8.1) | 6 (11.8) | 5 (8.1) |
| 10-19 years | 14 (22.6) | 18 (35.3) | 14 (22.6) |
| Over 20 years | 43 (69.3) | 27 (52.9) | 43 (69.3) |
| Severity of AD | | | |
| Mild | 31 (50.0) | 25 (49.0) | 31 (50.0) |
| Moderate | 27 (43.5) | 23 (45.1) | 27 (43.5) |
| Severe | 4 (6.5) | 3 (5.9) | 4 (6.5) |
| Access to web sites | | | |
| General issues | 58 (93.5) | 51 (100.0) ^a | 34 (54.8) ^a |
| General health | 18 (29.0) | 18 (35.3) ^b | 2 (3.2) ^b |
| AD | 18 (29.0) | 18 (35.3) ^c | 0 (0.0) ^c |

AD, atopic dermatitis; PC, personal computer; CP, cellular phone. There were 51 PC owners and 62 CP owners among all patients (*n* = 62). In addition to data on all patients, data on PC owners and CP owners were separately listed. Data are expressed as the mean ± s.d. or as subject number (% of total number). ^{a, b, c} *p* < 0.05 in comparison between PC and CP owners. Access rates to web site information on general issue, general health and AD were significantly higher in PC owners than CP owners.

have affected our results indicating the higher credibility of information on AD via PCs, even though the obtained score did not seem very high.

Additionally, up to now, several studies on some chronic diseases have reported that the Internet access rate for health purposes is about 40-60% of all Internet users, a figure which can be considered low for chronic diseases (Murero et al. 2001; Giménez-Pérez et al. 2002; Ikemba et al. 2002; Kalichman et al. 2002). Our results of the access rate of web site information via PCs also agreed with these prior study results. This may be in part explained by the relatively low perceived credibility of web site information. When accessing the Internet, vigilance in spotting inaccurate information is generally recognized (Takehara 2001). This issue is of paramount importance for the Internet to become a powerful and vital tool to support health care.

The duration and severity of AD had a positive correlation with the credibility of information

on AD accessed via PCs. The reasons for this are unclear; however, severe and/or long-term adult AD patients might have a greater burden physically, mentally and socially in their daily life compared to patients with mild-to-moderate disease conditions (Rystedt 1985; Fukuroku et al. 2002; Kiebert et al. 2002; Holm et al. 2006). So, they may want more information via various devices. In their lots of experience of searching, they could have more chance of obtaining credible information, for example, from the Japanese Dermatological Association, which is flowing on the Internet.

In summary, Internet accessibility was high among adult AD patients. Web site information about both general health and AD was mainly accessed via PCs, although not at a very high rate, compared to CPs. The credibility of Internet information on AD accessed via PCs was relatively low, and was affected by the duration and severity of AD. Our study was limited because of

the small sample size and uncertainty about the content of accessed web site information. More studies are therefore needed.

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