SCREENING FOR CERVICAL CANCER BY PAP SMEAR

Pages with reference to book, From 115 To 118

Sir,

I read with great interest the article, “Screening for Cervical Cancer by Pap Smear” by Rizvi et al from a very prestigious medical institution of our country, the Aga Khan University Hospital, published in September 1988 issue of your journal. Unfortunately the article is full of statistical errors and epidemiological blunders and as such most of the inferences drawn are incorrect. The authors have studied Pap smears obtained from 2806 patients, who attended Obstetrics and Gynaecology Clinics between November 1986 and February 1988. They found the prevalence of abnormal smear as 12.6 per 1000 women with the highest “incidence” among
25 - 44 years age group. The fallacies in calculations and interpretations of results are given below.

1. It is simply a prevalence study,, which gives us the number of the cases of a parti.cular morbid condition detected at a particular point of time. Therefore these data cannot provide the estimate of the "incidence", which is defined as “the number of new cases of a particular disease occurring in a defined population during a given period of time”. Even if all gynaecological patients could be taken as a population, each patient has been studied only at a particular point of time. It is possible that a patient, whose Pap smear was normal at the beginning of the study would have developed certain abnormalities by the end of the study period. If each patient would have been examined at the beginning as well as end of the study period, the authors might have been able to calculate the “incidence”.
2. In none of the tables, do the percentages add to 100.

TABLE

Age group (Years)	No. of Patients studied	No. of positive smears	Age-specific prevalence of abnormal smears	
			Per 100 Cases	Per 1000 Cases
16–24	471	3	0.64	6.4
25–34	1107	6	0.54	5.4
35–44	733	14	1.91	19.1
45–54	302	6	1.99	19.9
55–64	109	5	4.56	45.6
65–70	52	1	1.92	19.2

For example in Table I, 98.8% smears were adequate and 1.1% as inadequate.Il means that authors

have studied only 99.9% cases and 0.1% cases i.e. 3 cases have not been studied. In the same table, 97.6% smears were negative, while 1.26% showed positive cytology. These figures add upto 98.9%, which shows that 1.1% or 31 cases have not been accounted for.
Similarly the percentages given in the last column of Table II add upto only 99.7% and those in last column of Table III add upto 102% if the false positives are included, and only upto 99.2% if false positives are excluded.
3. The percentages have not been correctly calculated. Ditterent denominators have been used to calculate the percentage of positive and negative smears.
The denominator to calculate the positive and negative cases has to be the same. Table 1 shows that 35 positive cases constitute 1.26% of. the cases. This figure is arrived at only if 35 is divided by 2774 i.e. number of adequate smears, which is a logical way of calculating the positivity rate. lithe same denominator (2774) is used to calculate the negative smears, then the percentage of negative smears wifi be 2739+ 2774 X 100 = 98.74%. However according to Table 1, the percentage of negative smears is 97.6%, because the authors have used the number of total Pap smears obtained (2806) as denominator. If they would have used the same denominator (2806) to calculate the positivity rate, the figure should have been 1.24%.
4. The title of Table II reads as “Age distribution of 2739 Patients with Negative Smears and 35 with Positive Smears”. However when one looks at the age distribution given in the first three columns of the figure, one realizes that this age distribution pertains to all 2774 cases and not 2739 cases with negative smears.
5. Table 1 shows that there were 35 smears with positive cytology, out of which 34 cases had CIN while one case was false positive. On the contrary in Table III, the classification of 35 abnQrmal smears have been given and one false positive case has been mentioned separately. This has further been substantiated with the statement in the paragraph immediately below Table III, which states, “Thirty five patients had positive smears (12.6/ 1000) confirmed by subsequent histological examination of colposcopic directed biopsies or cone biopsies”. In one patient with mild dysplasia the cytology report was considered as false positive (2.8%) as no histological confirmation was obtained on cone biopsy. The patient was post menopausal and had attended the clinic because of abdominal/pelviô pain. If 35 cases had positive smears and were confirmed by colposcopic direct biopsies positive cases mentioned in table I is not or cone biopsies, then the figure of 34 correct.
6. The authors have distributed the positive cases according to the age groups and drawn a conclusion that of the women with positive smears 40% were between 35 and 44 years and a further 34% were between 25—34 years and 45-54 years. Thus 74% of abnormal smears were obtained in women between 25—54 of age. This is an epidemiological blunder. The age distribution of positive cases cannot give an estimate of the prevalence of any disease in various age groups unless and until the age-specific prevalence of that particular disease has been calculated. If we calculate the age-specific prevalence of the abnormal smear from the data under consideration, the following picture emerges. The difference between age-specific prevalence of abnormal smears among the first two age groups i.e. 16—24 years and 25—34 years is not statistically significant. The perusal of the above table reveals a picture absolutely different from the one portrayed by the authors. Here the age group with the highest prevalence of abnormal smears is 55—64 years. The figure for the last group cannot be given much importance because the number of observations is too small to derive valid statistical conclusions.
Yours faithfully,

N. REHAN
National Health Research Complex, Shaikh Zayed Hospital, Lahore – 54600.

REPLY

Dr. Rehan has obviously taken great pains to point out the deficiencies in our paper. We find that some of his comments are helpful and valid. We however disagree with him that these comments in any way change the recommendation and the message we are trying to put across, viz.,

a. That cervical "Pap" smear is a useful practical and a sensitive method of picking up Cervical Intraepithelial Neoplasia.

b. That the disease does exist in our population and is usually asymptomatic. This could probably explain the fact that cervical cancer is the third commonest malignancy which kills women in Pakistan.

c. That we should be encouraging all physicians to take "Pap" smears from married women.

d. That we need to have a much larger and probably a multicentral study to deterinine the prevalence of the disease in Pakistan. We would, of course, be delighted to co-operate with Dr. Rehan if he has a similar study in mind. We remain,

Yours sincerely,

J. Rizvi et al
Aga Khan University Hospital, Karachi.