It is customary in medicine to prescribe a treatment or a diagnostic method (or test) in practice only after studying its efficacy or accuracy. Yet the Bayesian method, in which probability is evidence from which a disease is diagnosed, has been prescribed for diagnosis for over 50 years (1) without any study of its diagnostic accuracy.

The Bayesian method was prescribed for diagnosis in mid 1960s on grounds of its rationality defined as not losing money when a probabilistic diagnosis (inference) is looked upon as placing a bet (2).

But our goal in diagnosis in practice, we suggest, is not so much as being rational as defined above as it is to determine a disease correctly in a given, individual patient with symptoms.

It is especially important to know about the diagnostic accuracy of the Bayesian method, we believe, as there are theoretical reasons which indicate that not only is this method unsuitable for diagnosis but that it may increase diagnostic errors.

The probability of a disease, being a frequency in a population (1), fails to represent evidence for or against a disease in a given, individual patient as we have argued elsewhere (3). Therefore the Bayesian method appears to be unsuitable for diagnosis in principle.

If the Bayesian method were to be strictly employed for diagnosis in practice, the notion of prior probability as prior evidence in it (1) is likely to promote diagnostic errors by encouraging failure to suspect diseases with atypical presentations due to their low prior probabilities.

The most striking fact about this method is that it has not been employed for diagnosis in any of the scores of published clinicopathologic conferences (CPCs) and clinical problem solving exercises despite having been prescribed for over 50 years.

The method employed for diagnosis in these exercises consists of hypothesis generation and verification in which probability does not play any role in
representing evidence (4, 5). The diagnostic accuracy of this method is extremely high as it leads to a correct diagnosis in 49 out of 50 CPCs (4).

In our judgment, the prescription of the Bayesian method for diagnosis in practice cannot be justified in absence of any data about its diagnostic accuracy.

References