Sensitivities, specificities, predictive values, and gain of apoE genotyping for the detection of an Ee4 allele in different series of patients with probable Alzheimer’s disease with neuropathological confirmation

<table>
<thead>
<tr>
<th>Source</th>
<th>n</th>
<th>Patients</th>
<th>Sensitivity</th>
<th>Specificity</th>
<th>Prior probability</th>
<th>Positive predictive value</th>
<th>apoE gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>CERAD</td>
<td>134</td>
<td>Prob AD</td>
<td>0.76</td>
<td>0.94</td>
<td>0.87</td>
<td>0.99</td>
<td>0.12</td>
</tr>
<tr>
<td>Duke</td>
<td>67</td>
<td>Prob AD</td>
<td>0.75</td>
<td>1.00</td>
<td>0.85</td>
<td>1.00</td>
<td>0.15</td>
</tr>
<tr>
<td>Perth</td>
<td>66</td>
<td>Prob AD</td>
<td>0.48</td>
<td>1.00</td>
<td>0.79</td>
<td>1.00</td>
<td>0.21</td>
</tr>
<tr>
<td>OPTIMA</td>
<td>37</td>
<td>Prob AD</td>
<td>0.78</td>
<td>1.00</td>
<td>0.80</td>
<td>1.00</td>
<td>0.07</td>
</tr>
<tr>
<td>OPTIMA</td>
<td>52</td>
<td>Prob AD</td>
<td>0.70</td>
<td>0.60</td>
<td>0.69</td>
<td>0.81</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Data are taken from the same sources as Roses and Saunders’ table 1.

disease, and (b) what is the increase of prob-
ability provided by apoE genotyping? The table
shows that in the series indicated by Roses and Saun-
ders (see their table 1), the prior probability of pa-
tients with probable Alzheimer’s disease ranges
from 79 to 100%, and that the gain of apoE gen-
yotyping is between 0 and 21%. Furthermore, the
gain of apoE genotyping in the group of pa-
tients in which additional information might be
more useful—that is, possible Alzheimer’s disease
is not higher (12%). Therefore, the higher the ac-
curacy of the clinical diagnosis of probable Alz-
heimer’s disease, the lower the gain from apoE gen-
yotyping.

Another situation in which apoE might
give additional diagnostic information is that
of epidemiological studies (for example, preva-
lence studies or secondary prevention interven-
tions on Alzheimer’s disease in the community). In
this case, apoE genotyping might increase the
specificity of screening tools—that is, decrease
the proportion of false positives. We have recently
estimated that the false positive rate of the mini
mental state examination (MMSE) as a screening
test for Alzheimer’s disease in the community
would decrease from 13 to 7% by adding infor-
mation on apoE genotype. This,
in a hypothetical study carried out in a
community of 1,000,000 with 7500 patients
with Alzheimer’s disease, with a sensitivity
set at 99% translates into a decrease of false
positive from 19,000 to 9500. The conse-
quence cost savings might be relevant.

We think that the issue of the diagnostic
gain is the central one in the cost/benefit anal-
ysis that must precede any diagnostic pro-
cedure. As for any medical service, the
task of researchers is to accurately estimate
costs and benefits. The individual provider
of the service or society as a whole will
then be able to judge whether or not the
benefits are worth the cost.

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1 Frisoni GB, Bianchetti A, Govoni S,
Trabucchi M. Diagnostic usefulness
of apolipoprotein E e4 in the diagnosis of the
dementias. J Neurol Neurosurg Psychiatry
2 Roses AD. Apolipoprotein E genotyping
in the differential diagnosis, not prediction,
of Alzheimer’s disease. Ann Neurol
3 Saunders AM, Hulette C, Welsh-Bohmer KA,
et al. Sensitivity, specificity, and predic-
tive value of apolipoprotein-E genotyping
for probable Alzheimer’s disease. Lancet
1996;348:90-3.
4 Frisoni GB, Gennari C, Bianchetti A, Binetti
G, Trabucchi M. The gain of apolipoprotein
E genotyping to separate Alzheimer’s disease
from normal individuals: relevance to com-

Clinical epilepsy

We are very grateful to Professor David
Chaddock for his complimentary and enthui-
siastic review of our book Clinical epilepsy
in this journal (J Neurol Neurosurg Psychiatry
1996;61:557). We must, however, correct
one error. The review suggests that we omit
a discussion of the syndrome of mesial tem-
poral lobe epilepsy. This is discussed in
detail in section 2.4.1 (pp 44-45).

BOOK REVIEWS

All titles reviewed here are available from
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Classic, Visa or American Express)
(stating card number, expiry date, and
your full name).

For further details of membership of the BNPA, which is open to psychiatrists, psychologists, neuro-
ologists, and those in related fields, please contact
Dr Jonathan Bird, Secretary BNPA, Burden
Neurological Hospital, Stoke Lane, Stapleton,
Bristol BS16 IQT.

Edited by C P WARLOW et al. (Pp 664;
£99-50). Published by Blackwell Science,

There was a time when it was de rigueur
to start the review of a book on stroke with a
preamble regretting the Cinderella status of
stroke in the interests of neurologists. This
was always a peculiarly British phenomenon
and this book marks the triumphant
rise of Cinderella’s slipper by the Prince, so
far as stroke doctors in the United Kingdom
is concerned. Clinical medicine should
always involve the application of science
to the management of disease, science being
a system of knowledge based on the evidence
of observation and experiment, hence the
nautical nature of the expression “evi-
dential” which has been a leitmotif for
the neurologists. This book has all the
characteristics of a good companion book
to the best book ever on stroke and
must rate as one of the best of a new
genre in medical publishing, a properly
scientific treatise that is also of practical value
in patient care. There is no statement whose
enlightenment is not carefully
documented. The regrettable tradition of
ex cathedra clinical dictates based on a mixture
of guess work and blind tradition which is
still so prevalent is nowhere to be seen
in this book. Even the first chapter on the
subject of our knowledge of stroke displays
an intellectual maturity (I suspect from
van Gijn) not often seen in doctors writing about
history. This is a chapter properly discussing

NOTICES

The 4th Asian- ocian international
congress of skull base surgery, hotel
Marriott, Islamabad, Pakistan, 8-10
November 1997

For further information please contact
Professor Ifikhar Ali Raja, Congress
President, 4-Gulberg Complex, 2-Gulberg
Road, Gulberg, Lahore-54660, Pakistan.
Telephone: 92-42-575 4400; Fax: 92-42-
575 9271; e-mail aliraja@aster.com.pk

8th International Symposium on ALS/
MND, 3-5 November 1997, Glasgow,
Scotland

Scientific meeting: From molecules to
medicines

Clinical meeting: Principles and values in
care management

For further information please contact
Margaret Hall, conference organiser,
MND Association UK, PO Box 246,
Northampton NN1 2PR, UK. Telephone:
01604 250505; Fax 01604 24726; Website
http://www.alsmndalliance.org

Announcement from the British
Neuropsychiatry Association: 1997
summer meeting

The 1997 summer meeting of the BNPA
will be held jointly with the American
Neuropsychiatry Association on 20-22
July at Robinson College, Cambridge,
UK. It will include half day sections on
frontosubcortical circuits and emotion/
reward/violence, and the presentation
of short scientific papers, posters, and single
case videos by members. The winner of the
1997 BNPA Prize will be announced. Two
prizes of £200 each will be given to the best
paper/poster presentations by junior mem-
ers. The AGM of the BNPA will be held on
21 July.

For further details of this meeting please
contact Suzanne Miller, 44 Roan Street,
London SE10 9JT. Telephone 0181 858
2699; fax 0181 853 4416; e-mail
wight@compuserve.com.