MEDICAL GENETICS: ADVANCES IN BRIEF


The potential to analyse over 300 conditions using molecular genetic methods is now available. In this third edition, these authors summarise the exponential rise in reports dealing with such analysis up to the end of 1990. For a given condition, McKusick number, available probes, distance between probes and disease locus, method of detection, mutation type, and references are listed. Of 304 conditions, 152 are dominant, 82 recessive, and 70 X linked. For single gene defects the vast majority of lesions are point mutations or deletions; gene insertions, duplications, and rearrangements are so far relatively minor components. For 80 conditions, direct analysis is not available and linkage analysis by RFLPs cannot be avoided. Like previous editions, this article provides a valuable quick reference to the relevant reports on a given disease and thereby to the groups who might be able to assist in the analysis of a genetic condition. A quarterly update by computer printout or floppy disk is available on request.

JOHN C K BARBER


The precise mechanics by which advantages of cystic fibrosis mutation detection might be applied to the benefit of the wider population in a humane and non-directive manner are the subject of scrutiny in a number of ongoing regional trials. In this article Wald suggests a couple based approach to population screening for cystic fibrosis. Mouthwash samples are obtained simultaneously from both partners. Either sample is tested for the two most common mutations, identifying 80% of all mutations. If a mutation is present, the second (partner's) sample is then taken. The partners' sample results in a mutation, the couple are notified of a 'positive' result. This 'no news is good news' form of screening is justified mathematically by hypothetical figures calculated for a mythical population. Clearly this approach has much to recommend it, especially in minimising anxieties which 'stepwise' screening inevitably arouses. My main concern stems not from the method of screening, but the overriding theme of the article that the aim of screening is handicap prevention with minimum side effect for minimum cost. Humane, non-directive screening must surely be a goal of the modern permissive society, with choices and not cross the boundary of repressive thinking which regards a 'positive' birth as a failure of screening. Is the eugenic pendulum on the upswing, Professor Wald?

W REARDON


Among the sources of human polymorphic DNA variation, the tandemly repeated hypervariable minisatelites (HVMs) are particularly useful; because of their high heterozygosity, they have been applied widely in genetic mapping and forensic work. Alec Jeffreys has always been at the cutting edge of this field, and in another technical tour de force has now advanced matters a step further. In 1990 Jeffreys et al showed that the repeat units of MS32 (one of the earliest known HVMs) comprised two types interspersed in a semirandom fashion, and distinguishable by restriction enzyme digestion. His group has extended this analysis using the polymerase chain reaction to identify and minisatellite variant repeats or MVRs. The order for any allele can be expressed as a simple binary code which turns out to be remarkably variable; all 334 unrelated subjects tested could be distinguished by their diploid MVR code. This method should avoid the subjectivity of band length scoring which has plagued the forensic use of HVMs, and will reawaken the debate about HVM function. Of 7/572 new mutant MVRs detected in progeny, two appeared after intra-allelic in origin, giving renewed credence to the theory (recently out of fashion) that HVMs serve as recombination hot spots.

ANDREW WILKIE


The precise mechanics by which advantages of cystic fibrosis mutation detection might be applied to the benefit of the wider population in a humane and non-directive manner are the subject of scrutiny in a number of ongoing regional trials. In this article Wald suggests a couple based approach to population screening for cystic fibrosis. Mouthwash samples are obtained simultaneously from both partners. Either sample is tested for the two most common mutations, identifying 80% of all mutations. If a mutation is present, the second (partner's) sample is then taken. The partners' sample results in a mutation, the couple are notified of a 'positive' result. This 'no news is good news' form of screening is justified mathematically by hypothetical figures calculated for a mythical population. Clearly this approach has much to recommend it, especially in minimising anxieties which 'stepwise' screening inevitably arouses. My main concern stems not from the method of screening, but the overriding theme of the article that the aim of screening is handicap prevention with minimum side effect for minimum cost. Humane, non-directive screening must surely be a goal of the modern permissive society, with choices and not cross the boundary of repressive thinking which regards a 'positive' birth as a failure of screening. Is the eugenic pendulum on the upswing, Professor Wald?

W REARDON


Malignant hyperthermia is one of the major causes of death owing to anaesthesia. It is a metabolic disorder of skeletal muscle and it can be triggered in susceptible people by common forms of used inhalation anaesthetics and depolarising muscle relaxants. Early clinical diagnosis is often difficult and the European Malignant Hyperthermia Group test, based on in vitro studies of caffeine and halothane induced contractions in muscle, is sometimes equivocal. Susceptibility to malignant hyperthermia is inherited as an autosomal dominant trait with complete penetrance in most families. DNA linkage analysis of a large Irish malignant hyperthermia family with 27 members confirmed linkage with markers from 19q13.1-13.2 (multipoint D19S5-CYP2A-MSH-D19S16-AP0C2, Z3 43) and with markers at these loci the markers the probability that five members of the pedigree who had not been investigated with the had the MHS gene was estimated to be greater than 99.7% for three of them and less than 0.3% for the remaining two. Both the cytochrome oxidase 1 (COX) and the mito- 

ANDREW NORMAN