Australasian Division of the
International Academy of Pathology Limited

Newsletters - 2004

Number One

Contents

25th International Congress of The IAP

October 10-15 Brisbane, Australia

It is six years since the Budapest meeting of the IAP at which we won the competitive bid to host this International Congress, and now less than six weeks before it begins.

Arrangements for the Congress are now well advanced. Over 1,000 delegates have registered already and almost 200 accompanying persons are also registered. Almost all of the trade display areas have been purchased. We have had generous sponsorship from the companies and individuals listed in the sponsor column. As a result of this, the organizing committee is confident that we will not make a financial loss.

The organization has been spear-headed by Robin Cooke and Bob Eckstein and there has been enthusiastic support from convenors of sessions and individual presenters from both the public and private sectors from all states of Australia and New Zealand, and from Singapore and Malaysia. The Australasian Division convenors have been generously assisted by colleagues from many countries around the globe. The spread of countries from which convenors and speakers are coming, and particularly the spread of countries of the registered delegates, is a clear indication of the truly international character of this Congress.

The last time the International Congress of the IAP was held in Australia was 1982. With the increase in the number of Divisions within the IAP, and the increasing interest of Divisions to hold the International Congress, it is most unlikely that another Congress will occur in Australia within the next thirty years. Thus, only the youngest pathologists in the Division will still be practising pathology when the next Congress is held in our part of the world. Hence it is important that all practising pathologists should try to attend this meeting. It is

important that the organizers of this meeting, and future committees of the Australasian Division encourage the younger pathologists to maintain their interest in the International Academy of Pathology. The organizing committee has tried to make it possible for pathologists to attend by having a special three-day registration. Hopefully this should allow rostering so that as many pathologists as possible can attend the meeting.

To cater for the pathology trainees, a special training day has been arranged for Sunday, October 10. There will be lectures from 9.30 am to 5.30 pm at the Convention Centre, especially for pathology trainees. This session has been funded by a generous donation from the Queensland Cancer Fund. It will be free to all pathology trainees. The lecture theatre will be donated by the Congress and the catering for lunch and afternoon tea will be paid for by the Queensland Cancer Fund, the Royal College of Pathologists of Australasia and the retired pathologists of Brisbane.

The eight speakers will be chosen from the galaxy of famous pathologists who will be attending the Congress. In keeping with the wishes of the Queensland Cancer Fund all of the lectures will be on various aspects of cancer. Other VIPs are being invited to meet the Trainees during lunch and afternoon tea. We hope this will be a stimulating and informative day.

Any registrar who wishes to attend this Congress should please contact Stephanie Gurr at email: stephanieg@eventplanners.com.au to indicate they will be attending so that appropriate catering can be arranged. Apart from the Sunday, Registrars may attend any of the Congress sessions for a daily fee of $150. To register for this, please contact Stephanie Gurr.
No practising pathologist can work without support from our scientific colleagues. It is appropriate that the scientists should be encouraged to attend any sessions they wish during the Congress. There will be a day registration fee of $150. Scientists wishing to attend should do so and register before the Congress opens by emailing stephanieg@eventplanners.com.au.

Our Division is hosting the pathologists of the world in this week in October. The organizers hope that every member of the Division will take on a personal role as a host for our overseas colleagues. Two social functions have been arranged to try to encourage this spirit of camaraderie. Hopefully it will be as successful as the camaraderie engendered at the Olympic Games in Sydney in 2000. There will be a wine and cheese function on the Sunday evening to which all delegates are invited. This will give about half of the Australasian Division members the opportunity to host the international visitors and the other half will have a similar opportunity on the Wednesday evening. On the Wednesday evening from 5.45 to approximately 7.15 pm, there will be another social function of a slightly different nature. It is planned that the Divisions from the south east Asian regional grouping which have already had three meetings in Sydney, Seoul and Bangkok and are planning another meeting in Beijing in 2005, together with the Australasian Division, will host a drinks function to which they will invite all of the delegates to the Congress. This will be held on the 1st floor of the Convention Centre in association with the lecture theatres and public area on this floor. The organizers hope that you will take advantage of these two occasions to meet and welcome our visitors.

The opening ceremony and welcome reception on Monday evening should be a most enjoyable occasion. The opening ceremony will be held in the main auditorium. The welcome reception will be held as a bar-b-que on the beach which has been built in the South Bank prescinct about 100 metres from the Congress Centre. The formal dinner will be held on Wednesday evening at the Convention Centre. Over 300 delegates have already registered for the dinner. The Convention Centre has won many prizes for not only its facilities as a Convention Centre, but also for its excellence in catering.

The scientific sessions all look to be extremely interesting and they are a credit to those who organized them.

For a current copy of the programme, visit the Congress website iap04.im.com.au. Twenty-six slide seminars will be offered. Four of these will be done as glass slides and stapled hand-outs, as has been done in the past. The other twenty-two have been prepared as an interactive CD rom rather than glass slides, and at the Congress, participants will get a printed book which will contain all of the images from the CD together with the diagnoses and commentaries. The CD will be able to be attached to the inner cover of the book so that they can be stored together on a bookshelf. There is no limit to the number of slide seminars that an individual or a department can purchase. If anyone wishes to purchase copies they should email the Congress office. Again, the contact is stephanieg@eventplanners.com.au.

The organizing committee welcomes you to the Congress. Please come and enjoy it and invite your registrars and scientists to do the same.

Robin Cooke

Congress Highlights

Slide Seminars

Every case in every seminar is an in-depth approach to a case presented by an expert. The "glass slide" for discussion is presented in the form of digital images taken to simulate the way a pathologist examines a slide. Many cases include other material necessary for making a diagnosis in a routine laboratory – Xrays, gross, endoscopy, special stains, frozen sections, other sections that illustrate additional features of the case.
All of the images (with captions that indicate the important diagnostic features) are reproduced in a book, together with further information on the case, and a Commentary on the case with references. The book and CD can be filed on a book-shelf which makes them easily accessible for future study or reference.
Another big advantage is that every seminar done in this way can be purchased by anyone in the world as well as by those who actually attend the Congress.
There is no limit to the number of slide seminars that can be ordered.

Symposium on Grossing (Cut-ups) being done by Scientists

Friday Afternoon

Everywhere, pathologists are facing increasing work loads, and there is a world-wide shortage of Pathologists. One means of relieving this problem is to recruit scientists to assist in grossing. In the U.S., courses have been devised to give scientists a post graduate diploma that allows them to become Pathologists' Assistants. Similar courses are being introduced in other countries. The leading speakers at the Symposium will be expert scientists from the US and the UK. It will provide a forum in which this topic can be discussed from an International perspective.

Symposium on International Recognition of National Specialist Training with Particular Reference to Pathology

Tuesday Afternoon

International recognition of medical specialist trainings and certifications is at this moment still at an embryonal level. Except for the countries of the European Union, that have reciprocity for each others diplomas, this phenomenon is hardly known in other continents, and certainly not between different continents. Nevertheless for the quality of medical

professions world wide, a system leading towards international recognition and certification would be an enormous step forward. In this symposium professionals in this field will discuss the problems and barriers that block this process till now and they will discuss possible solutions.

Infectious Diseases a Global Perspective

Thursday - There will be a whole day symposium seminar.

A number of well credentialled and respected international speakers will be giving us the lowdown on what's new in infectious diseases.

In the morning the emphasis will be on the histology of new and emerging pathogens, beginning with an introduction to the global aspects of infectious diseases pathology by Dr Ann Marie Nelson, Chief, AIDS Pathology Branch, Armed Forces Institute of Pathology, and continuing with a global emphasis with speakers from the USA, Japan, Britain, South Africa and India.

The afternoon session is divided into two parts. The first is a continuation of the morning's theme with a talk on tropical infectious disease pathology in Malaysia by Dr Norain Karim Followed by a "cook's tour" of tropical pathogens in Far North Queensland and the Torres Strait, by Dr John McBride.

Following afternoon tea the emphasis will shift to Mycobacterium ulcerans, a ubiquitous worldwide pathogen, with special significance to Australia.

The seminar will include individual talks on the clinico-pathological classification and the pathology of Mycobacterium ulcerans infection followed by an expert panel discussion.

Friday Morning - Slide Seminar

This will feature a number of "emerging virus Infections" that jump the species barrier from animals to humans. A group of Infectious diseases Physicians, Microbiologists and Pathologists will present 3 human cases of a new virus that appeared in Brisbane- the Hendra virus.

On Friday afternoon, the Aust Soc of Veterinary Pathologists will hold a session in which they will demonstrate cases of animal disease that can cross the species barrier to infect humans.

History of Pathology Session

Monday Morning

A Brisbane surgeon who was brought up in Tropical North Queensland will set the scene for the other presentations in this session. He will describe the very basic nature of medical services and hospital facilities that were available there before 1900.

The following speakers will tell how 3 Queensland doctors who worked in the subsequent 20 year periods, all with very limited facilities, made discoveries of international significance – The parasite of Filariasis, Q fever and Apoptosis.

Palaeopathology

Monday Afternoon

We will be told about the interesting medical facts that have emerged from the studies conducted on the mummified remains of ancient Peruvian people over a period of 40 years of continuous investigations.

A member of the Archaeology Department of the Univ. of Queensland will demonstrate the results of a new DNA test for identifying the presence of various infectious diseases in bones from previous generations.

Australia is rich in the fossilized skeletal remains of Dinosaurs. Numerous fossilized bones of the pre-cursors of Australia's unique mammals have recently been discovered. The Curator of fossils at the Queensland Museum is Australia's expert on this topic. He is young and a

dynamic speaker. He will talk about the pre-historic mammals, and demonstrate some of the pathological conditions that they exhibit.

Breast Pathology

A wide range of topical issues in breast pathology will be presented over 4 half-day sessions on Monday morning and afternoon, Tuesday morning and Wednesday afternoon. Speakers from all continents are represented in the symposia, slide seminar and presentation of papers sessions (the latter on Wednesday morning). The symposium on assessment of risk of malignant breast disease includes a review of screening mammography, genetic predisposition in breast cancer (including BRCA 1 and 2 status), interpretation of atypical epithelial hyperplasias, classification of in situ carcinoma (with a summary of the latest WHO "Blue Book" Ductal carcinoma in situ classification) and cytomorphology of borderline breast lesions. Further cytological aspects of breast disease will be presented in the companion cytology meeting following the IAP Congress.

New molecular techniques and the value of assessing genotype in breast tumours, with potential future prognostic implications, will be covered in a session on "The pathologist and the role of targeted therapy" on Monday morning. An Oncologist with extensive experience in the treatment of breast cancer will present the relationship between pathological prognostic markers and current and future "biologic" targeted therapies.

The sessions on "Optimal pathology reporting" will discuss standardisation of hormone receptor analysis and Her 2 testing in addition to optimal processing and assessment of sentinel lymph nodes. An overview of sentinel node trials in Europe will be presented and representatives from Europe, the United Kingdom and Australia will discuss the quality assurance programs in place for practising pathologists. On Monday lunch time the keynote address will be presented by Professor Vincenzo Eusebi from the University of Bologna, Italy, on the contribution of pathologists to classification, biological behaviour and treatment of breast cancer.

In the slide seminar on Wednesday afternoon 10 interesting cases from the United Kingdom, United States of America, Hong Kong, Japan, Thailand and Australia will be presented. Further information on the slide seminar is available elsewhere on the website: http://www.iap04.im.com.au

Short Course – Recent Advances in Immunohistology

Course description: Six experts in immunohistology will discuss newer aspects of antigen retrieval, objectivity in molecular morphology, the biology of and evolution of neoplasia in the cervix and immunohistological diagnosis of neoplasia in the female genital tract, breast and neuroendocrine tumors.

"Arkadi M. Rywlin International Pathology Slide Seminar"

Friday Morning

This a voluntary organization created more than 10 years ago to foster the exchange of ideas and of interesting cases among a select group of Academic Surgical Pathologists throughout the world. The present course represents an extension of this concept. Twelve cases will be presented and discussed by members of the Club. The cases selected will include controversial topics which are discussed in an eclectic and provocative fashion, with an aim to stimulate new and original approaches to the understanding of the topic. Registrants will receive a set of glass slides and a comprehensive handout.

Paediatric/Perinatal

Monday Morning

This symposium will be an educational morning focussing on Developments on perinatal and paediatric pulmonary pathology. We will start with a presentation on experimental and interventional studies on pulmonary hypoplasia in animals and humans. This leads nicely into a state-of-the-art lecture on fetal lung vascular development - including molecular mechanisms - and implications for lung function. The third lecture continues this molecular theme by presenting the range of pathological findings in lung biopsies in infants and the correlation with some developmental surfactant mutations. This will be followed by two talks that link congenital pulmonary abnormalities with adult pulmonary disease. The last talk will be on lung tumours in childhood.

Monday afternoon

The theme of this session is the autopsy and long term outcomes. We are grateful to have a neonatologist provide us with the epidemiology and scope of cerebral palsy. The pathology of cerebral palsy will be extensively illustrated in the next talk. The importance of the autopsy will be illustrated by the third talk, which will detail the extent of antepartum brain injury. The next talk will critically review the contribution of the placenta, in particular two poorly understood lesions, in adverse pregnancy outcome. The last talk will demonstrate again the value of the autopsy by outlining the natural and non-natural causes of neonatal sudden death.

Tuesday Morning

The overall theme of this Short Course session is advances in paediatric tumour pathology. This will include classification, pathogenesis, diagnosis and application of molecular techniques to diagnosis and classification. As evident from the programme, the speakers will share their wealth of experience on liver, Ewing's and other bone tumours, paediatric soft tissue tumours and dysgenetic gonadal tumours.

Tuesday Afternoon

This will be a very informative Slide Seminar session. There will be three cases of tumours in the urinary tract, including a mimic, and three cases of soft tissue tumours. Two other tumour cases will illustrate two points: esoteric disease can present in childhood and there is always a seemingly simple diagnostic modality. There are two non-tumour cases that will remind us of rare and recently described entities.

Surgical Pathology Potpourri: A Singapore/Malaysia Experience

Surgical pathology with a South East Asian flavour! A Singapore-Malaysia Experience! A selection of interesting and unusual cases involving the breast, bone, gastrointestinal tract, liver, lung and lymph node will be presented. Participants will be given an insight to the diagnostic dilemmas encountered in establishing the correct diagnosis. Some of the cases are problematic, with benign lesions mimicking malignant tumours and vice versa e.g a unique lung tumour with goblet cells. Others are peculiar to this region e.g. an uncommon parasitic infestation. Yet there are cases which are rare but represent important entities to be considered in routine surgical pathology practice e.g. an interesting proliferation of spindle cells within breast ducts.

QAP Symposium

Thursday 14 October

Morning Session

This session will show case quality assurance programs in Anatomical Pathology from the United Kingdom, United States of America, Japan and Australia. The speakers will present their current programs and future directions of this important area of Pathology. These will highlight best practices that can be taken home and readily used.

Afternoon Session - Error and Error Reduction Symposium

Errors in Anatomical Pathology is an issue that is gaining increasing recognition and concern within our profession. In this session speakers will discuss the types of errors that can occur

in Anatomical Pathology and recommend useful ways to recognize and reduce them. The presentations and illustrative cases will emphasize the importance of using, monitoring and maintaining quality systems to minimize the errors and continue to improve the practice of anatomic pathology and the outcomes of patients.
The Autopsy in Modern Society: a Precarious Relationship.
Friday Afternoon
Eight speakers from around the world will discuss the benefits of the autopsy, as well as the difficulties the autopsy is facing (such as retained organ issues). If the autopsy is to survive, we must advocate it as one of the best tools for teaching medical students, and look at ways of integrating it with other patient investigations to act as a total quality tool. Ways of improving the performance and reporting of autopsies will be discussed. Lateral thinking will also be encouraged by way of consideration of veterinary autopsies, and the complex medicolegal autopsy.

Photography

Friday Morning
This is a "hands on" demonstration of photomicrography and gross specimen photography using digital technology presented by professional medical photographers. Filing of these images, and converting them to power point for a presentation will be demonstrated. Preparation of digital images for printing will be demonstrated. This is an opportunity for pathologists to ask advice from experts.

Veterinary Pathology Session

On Friday afternoon the Veterinary Pathology session will present in detail the veterinary version of the interesting panel of zoonotic diseases which have emerged recently in Australia and nearby regions in Asia. These conditions include SARS, Hendravirus, Nipavirus and Australian bat lyssavirus, with probable passing mention of avian influenza H5. This session will complement the infectious diseases session to be held on Friday morning.

Lung Tumour Slide Seminar

This slide seminar will showcase eight distinct and, at times, unusual tumours as presented by pathologists experienced in lung diseases including Bill Travis, Tom Colby and Elisabeth Brambilla. These tumours encompass benign and malignant and primary and metastatic lesions.

Interstitial Lung Diseases Slide Seminar

The recent American Thoracic Society/European Respiratory Society classification highlights the need for clinical, radiological and pathological correlation in proper diagnosis of interstitial lung diseases. This slide seminar, as presented by some of the leading lights of pulmonary pathology, endeavours to take common and unusual interstitial lung diseases and demonstrate an approach to their diagnosis.

Sudden Cardiac Death Symposium

Sudden cardiac death is a common mode of death which has many underlying aetiologies. This symposium includes presentations by Dr Allen Burke and Dr Eugene Mark who will discuss common forms of death including coronary artery disease and myocardial abnormalities as well as more unusual modes such as death related to pulmonary embolus, electrophysiological abnormalities, particularly long QT segment and valvular disease.

Symposium on Diseases of Blood Vessels

Every organ has blood vessels. Therefore, an understanding of disease processes associated with blood vessels is essential to every working pathologist. This symposium will cover the gamut of pathological processes associated with blood vessels including large vessel and small vessel inflammatory and neoplastic disorders. Speakers from Asia, North America and Australia expert in the field will present their experience with these processes.

30th Annual Scientific Meeting

Australasian Division of the International Academy of Pathology Limited

2005 - June 3, 4, 5

Invited Speakers:

Skin Pathology
Dr David Weedon, Sullivan Nicolaides Pathology, Brisbane, Australia

Head and Neck Pathology and Molecular Pathology
Dr Jennifer Hunt, University of Pittsburg Medical Center, Pittsburg, USA

Respiratory Pathology and Quality Measures
Dr Henry Tazelaar, Mayo Clinic, Rochester, Minnesota, USA

Annual General Meeting of the Australasian Division 2004

will be held at the Brisbane Convention Centre on THURSDAY, OCTOBER 14th commencing at 5.45 pm.

All members are invited to attend this meeting.

Drinks will be served following the meeting.

Sponsorship Donations for Congress 2004

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CISH Testing for HER2 and Correlation with IHC and FISH:

The Results of an Australian Study.

Associate Professor Michael Bilous, Director, Department of Tissue Pathology, Institute of Clinical Pathology and Medical Research, Westmead Hospital, NSW.

Introduction

Patients with metastatic breast cancer whose tumours overexpress HER2 and/or show amplification of the HER2 gene show significant survival advantage after treatment with Herceptin®. HER2 testing of breast cancer specimens is therefore being performed in laboratories throughout the world.
The two main testing methods in general use and globally accepted as the HER2 testing standard methodologies are immunohistochemistry (IHC) to detect HER2 protein overexpression and fluorescence in-situ hybridisation (FISH) to detect amplification of the HER2 gene. Both methodologies are specific and reliable. However, they also have their problems.

Chromogenic in-situ hybridisation (CISH) has recently been adapted for the detection of HER2 gene amplification and follows the same principle as FISH. However, the CISH detection method involves the DAB chromogen rather than a fluorescent marker, therefore only a normal light microscope is required to visualise the result. Tumour cell morphology is better seen and the resulting slides can be stored at room temperature without loss of signal. CISH is therefore a potential alternative testing method to FISH.
In order to evaluate the accuracy, ease of use and reproducibility of CISH performed in different pathology laboratories, five Australian Laboratories recently completed a study in which they compared the results of testing for HER2 using CISH on a series of breast cancers for which the HER2 status was known by IHC and FISH. The results of this study were the subject of a poster and presentation at the European Breast Cancer Conference held in Hamburg in March 20041. Three of the five laboratories had no previous experience in the use of CISH. These laboratories received 2 days CISH training prior to participation in the study. A summary of the results of the study is given below.

Materials and Methods

Sections of 50 breast cancers labelled A1–50 were each tested for HER2 in two different laboratories using CISH with SpoT-Light® HER2 DNA probe (Zymed Laboratories Inc). Each of the five participating laboratories thus tested 20 of the cancers.
Each cancer had been previously tested for HER2 using IHC; the HercepTest® (Dako Cytomation) had been used in the majority of cases. All the cancers had scored either 2+ (equivocal) or 3+ (positive) using the HercepTest® scoring system.
Each cancer had also been previously tested for HER2 gene amplification by FISH using PathVysion® (Vysis, Abbott) at one central laboratory (St Vincent's Hospital, Sydney, Australia). The results of both CISH and FISH were expressed as no amplification, low

amplification or high amplification of the HER2 gene.
The laboratories taking part in the study did not know the previous HER2 results of the cancers being assessed by CISH

Scoring system

CISH was scored as follows:
• 1–5 HER2 signals per nucleus = no amplification of the gene
• 6–10 signals or a small signal cluster = low amplification
• >10 signals or large clusters = high amplification.

Results

Morphology in the CISH stained sections

Preservation of cellular morphology in the sections was assessed as reasonable, good or excellent in 42 of the 50 cases (84%)
Repeat staining was required in only five of the 50 cases (10%); the other 45 were assessable after the first staining run.

Comparison between FISH and CISH

Table 1 shows the correlation between CISH and FISH for the 50 cancers in duplicate set 1.
• No cases showing high gene amplification by FISH (21 cases) were considered non-amplified by CISH (kappa coefficient = 1)
• Of the 31 cases showing low and high amplification by FISH, 28 cases also showed amplification by CISH (kappa coefficient = 0.88)
• Correlation between CISH and FISH for low- and high-amplification cases was moderate (kappa coefficient = 0.5).

Table 1
Correlation between CISH and FISH.

	FISH			
CISH	High amplification	Low amplification	No amplification	TOTAL
High amplification	19	3	0	22
Low amplification	2	4	0	6
No amplification	0	3	19	22
TOTAL	21	10	19	50

Comparison between CISH & IHC

Table 2 shows the comparison between CISH and IHC results
• All cases scored 2+ or 3+ by IHC as part of the selection criteria
• All cases scored as 3+ by IHC showed gene amplification by CISH
• Of 31 cases giving a 2+ result by IHC, 22 (70%) did not show amplification by CISH.
• Of the 22 cases showing high gene amplification by CISH, 16 (72%) had scored 3+ by IHC

Table 2
Correlation between CISH and IHC

	IHC		
CISH	2+	3+	TOTAL
High amplification	6	16	22
Low amplification	3	3	6
No amplification	22	0	22
TOTAL	31	19	50

Correlation between CISH performed on the same cases in two different laboratories

Table 3 shows the inter-laboratory CISH correlation.

- The kappa coefficient was 0.67, indicating good strength of agreement between the two complete sets of results
- In the two sets of results there were no discordant cases when comparing high level gene amplification with no gene amplification (Kappa coefficient = 1).
- A comparison of both high- and low-level amplified versus non-amplified cases shows very good strength of agreement (Kappa coefficient = 0.83)
- In those cases assessed as non-amplified in one set of results and low-level amplified in the other, the number of signals counted in the same case varied markedly. For example Case A48: 1.4 and 8.6, Case A10: 3.96 and 1.8; Case 47: 3.2 and 6.

Table 3
Inter-laboratory CISH correlation.

	DUPLICATE 2			
Duplicate 1	High amplification	Low amplification	No amplification	TOTAL
High amplification	18	3	0	21
Low amplification	3	3	0	6
No amplification	0	4	18	22
TOTAL	21	10	18	49

Discussion

There is excellent correlation between CISH and FISH for identifying high-level HER2 gene amplified breast cancers, and good correlation in assessing any amplification using the manufacturer's interpretation of results for both techniques. Given the different criteria for assessing high- and low-level gene amplification in the FISH and CISH techniques, it was predictable that the low gene amplification category would present the greatest number of discrepant cases.

There is very good correlation between the results obtained by laboratories performing CISH on the same cases, even when the laboratories have little or no previous experience with the technique.

CISH showed a strong correlation with HercepTest® IHC, in the majority of cases.

Laboratories performing CISH for the first time experienced very little difficulty in using the technique and in interpreting the results. Comment was however made concerning the difficulty in counting the precise number of signals present in coarse clusters seen in the nuclei of some cancer cells. These are most likely to be highly amplified cases.

This study also showed (data not shown) that more than 50% of cases showing HER2 gene amplification were ER positive but that the proportion of ER-positive cells was less in those cancers showing high-level HER2 gene amplification than in those with low-level or no amplification. Testing for HER2 should therefore not be restricted to those cancers that are ER negative.

The clinical significance of low-level HER2 gene amplification with CISH (6–10 copies of the HER2 gene signal per nucleus) or FISH (HER2 gene:chromosome 17 ratio of 2–4) will need to be clarified in the light of treatment outcome data.

Conclusions

CISH testing for HER2 gene amplification represents a potential alternative method to FISH.

CISH can be performed by pathology laboratories without prior CISH experience with minimal training.

Results obtained using CISH are highly reproducible between laboratories.

Reference

1. Bilous M., Morey A., Armes J., Cummings M., Francis G. Abstract and Poster No. 160; 4th European Breast Cancer Conference, March 16-19 2004