Report on the Advances in Neuroblastoma Research 2008 Conference, held at the Makuhari Messe International Conference Hall, Chiba, Japan (May 21 – 24, 2008)

Duncan Ayers

Advances in Neuroblastoma Research (ANR) was founded in 1975 in Philadelphia by Drs. Audrey E Evans, Everet Koop and Guilio D'Angio, with the initial meeting having an attendance of less than 20 neuroblastoma researchers. Nowadays, this biannual conference hosts over 400 of the world's most talented neuroblastoma researchers. This year I was fortunate enough, with generous support from the Neuroblastoma Society UK, to be able to attend the ANR 2008 conference which was held in Chiba, Japan.

The main themes presented and discussed at the conference involved the latest and best studies covering the basic, translational and clinical neuoblastoma research fields. Unfortunately, the use of parallel sessions makes an impossiblity to report in entirety all of the 406 plenary oral presentations, educational lectures, workshops and scientific posters within the confines of this article. However I will report my summaries of the studies which I believe gave the highest impact and aroused fervent interest amongst the major neuroblastoma researchers attending the conference.

Undoubtedly, the thorough investigation by Prof. Garrett Brodeur's group leading to the identification of *CHD5* as a novel tumour suppression gene (Okawa *et al.*, 2008), sparked a lot of excitement. This study demonstrated that most neuroblastoma cell lines did not have this specific gene in their genetic make-up. Furthermore, when these same neuroblastoma tissues were exposed to *CHD5* at the genetic level, tumour growth was found to be severely impaired. Such a discovery proves to be important in giving a better picture on how neuroblastoma is able to develop.

The presentation by Jun Wei also provided much interest as it involved the possible exploitation of the RNA interference pathways as a therapeutic lead in neuroblastoma. This technique involved the utilisation of microRNA-34a for the suppression of neuroblastoma tumour growth. Because my research also concerns the development of RNA-interference-based therapies for neuroblastoma, I was highly enthused as this presentation gave me ideas aplenty.

The presentation by Yael Mosse was also highly interesting. This study strengthened the findings from previous studies (Stock *et al.*, 2008) which noticed Anaplastic Lymphoma Kinase (*ALK*) as another amplified neuroblastoma oncogene at a level par of importance with *MYCN*. A genome-wide linkage screen of 18 neuroblastoma pedigrees was able to find a 16 Mb region on chromosome 2p24-23, on which *ALK* is present. The presenter also suggested that this gene could play a part in the development of non-familial neuroblastomas.

The highlight of the clinical research in neuroblastoma was the review and progress made in the development of the International Neuroblastoma Risk Group (INRG). The purpose of the INRG is to provide a standardized pre-treatment risk stratification which would be adopted globally in the clinical setting. This stratification has now been finalized to sixteen definite pre-treatment groups, based on clinical factors and statistically significant event-free survival characteristics.

The poster sessions also proved to be stimulating, as I had the privilege to present my own scientific poster relating to the use of novel microarrays in cisplatin analogue development, and I appreciated some good feedback from those who read my poster during the Q & A poster session.

I also found time to view the other researchers' posters as well. The two posters by Pattyn *et al.* were striking since one of them entailed the development of a novel, freely accessible database of all *MYCN* target genes, both on the primary and secondary transcription target level (MYCNot, see http://medgen.ugent.be/MYCNot). The second poster concerned the setup of a free access database known as the Neuroblastoma Gene Server (http://medgen.ugent.be/NBGS) which enables the user to examine if his/her gene of interest is expressed in neuroblastoma, based on previously published gene expression profiling studies.

The poster by Torres *et al.* was intriguing as it concerned the effectiveness of *MYCN* destabilisers in *MYCN* amplified neuroblastoma cell lines. The notion of this poster was that S(+)Ibuprofen was also found to be a *MYCN* destabiliser, possibly mediated by activation of caspase-3, which leads to neuroblastoma cell death.

The use of nutlin-3 as a possible anti-tumour drug in chemoresistant neuroblastoma, described in the poster by Van Maerken *et al.*, was also illuminating. Nutlin-3 exerts its effect by means of antagonizing MDM2, resulting in the reactivation of the p53 pathway in chemoresistant neuroblastomas.

Other important events taking place during the conference were the International Nurses Meeting, the International Neuroblastoma Pathological Classification (INPC) Meeting and the International Neuroblastoma Tissue Bank (INTB) Meeting. This last event involved a round-table discussion concerning the future implementation of a centralized neuroblastoma tissue bank for international researchers who require primary neuroblastoma tissues for their studies.

Most notably, the ANR 2008 conference also hosted the 2008 International Open Symposium on Childhood Cancer Survivorship, in which Japanese and international volunteer groups of childhood cancer survivors had the opportunity to share their story of courage and determination in defeating their affliction with the audience present.

The social events at the conference were also of great importance for my research too, as I had the opportunity to network with international neuroblastoma researchers. Following the meeting, I now have access to over 20 separate neuroblastoma cell lines by courtesty

of Dr. K. Astrahantseff of the Department of Paediatric Oncology, University Hospital of Essen Medical School, Germany. I have also met with paediatric oncologists from Kyushu University in Japan, Samsung Medical Center in Seoul, Korea and the Bhaktapur Cancer Hospital in Nepal, and may prove helpful should my research will be involving primary neuroblastoma tissue samples.

Overall, the ANR2008 conference proved to be of immense success for a variety of reasons. Firstly, the strong links between the ANR society and groups such as the INRG, INPC, and the newly founded INTB will help to enhance networking amongst international neuroblastoma clinicians and scientists, serving to apply novel neuroblastoma treatment protocols on a global scale. Secondly, the advances in genome-wide analyses have progressed rapidly, facilitating more research studies of this nature to be feasibly performed, with the identification of a large number of candidate genes and proteins which may serve as possible drug targets when screening novel small compounds to act against neuroblastoma. Finally, the Cancer Survivorship Symposium truly demonstrated why we need to push our research efforts even further, in order to give hope to all children afflicted with this condition.

I thank the Neuroblastoma Society once again for their support in the form of my travel grant for the conference, and I sincerely hope that the Society will continue to extend their support to fellow neuroblastoma researchers in the future.

References:

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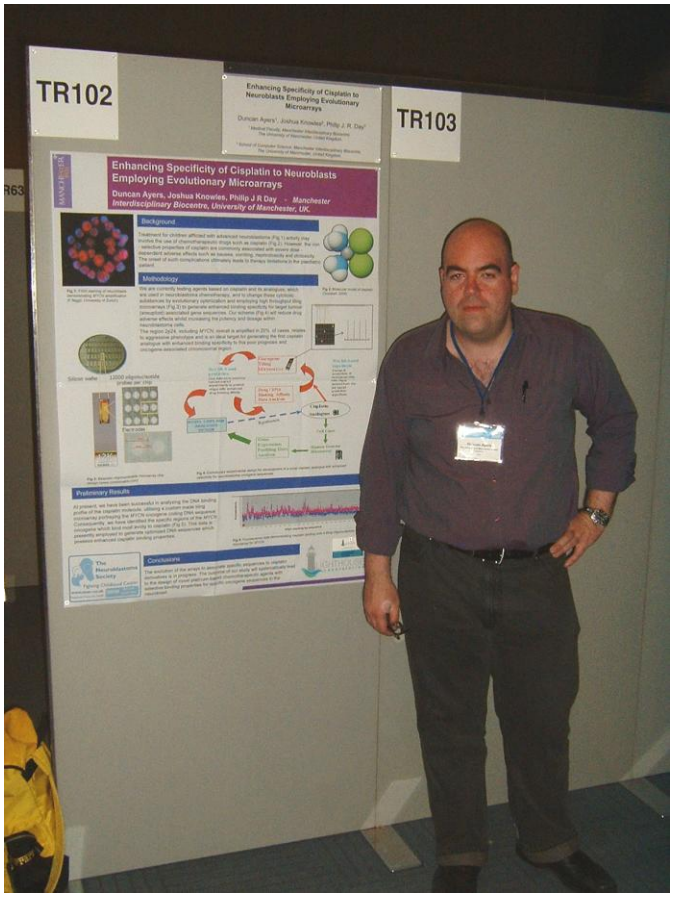
Stock C, Bozsaky E, Watzinger F, Poetschger U, Orel L, Lion T, Kowalska A, Ambros PF. Genes proximal and distal to MYCN are highly expressed in human neuroblastoma as visualized by comparative expressed sequence hybridization. Am J Pathol. 2008 Apr;172(4):1153.

Dr.Akira Kanagawa presenting his speech during the opening ceremony of the ANR 2008 conference.



Myself along side my scientific poster being presented atthe ANR2008 poster sessions

Distribution of ANR2008 souvenirs following the closing of the Cancer Survivorship Symposium.