出國報告(出國類別：開會)

第 4 屆歐洲兒科醫學會議

服務機關：三軍總醫院小兒部
姓名職稱：范洪春(主治醫師)/胡智棻(住院醫師)
派赴國家：土耳其
報告日期：101 年 10 月 19 日
出國時間：101 年 10 月 3 日至 10 月 10 日

壹、摘要

歐洲兒科醫學會議(European Academy of Pediatric Societies; EAPS)肇始於 2006 年，涵蓋 27 個歐盟會員國，以下分會包括歐洲兒科醫學會 European Academy of Pediatrics(EAP)、歐洲兒科及新生兒科重症醫學會(European Society of Pediatric & Neonatal Intensive Care; ESPNIC)以及歐洲兒科研究醫學會 European Society of Pediatric Research (ESPR)。2012 年 10 月 5 日至 10 月 9 日在土耳其的伊斯坦堡舉行第 4 屆歐洲兒科醫學會議，主席爲荷蘭的 Jan Hazelzet 教授以及瑞士的 Petra Huppi 教授，研討會的議題包括兒科各次專科以及護理相關領域的熱門話題、最新的研究、治療方式及研究創作皆有相當廣泛而深入的討論。本次歐洲兒科醫學會議除了專題演講、口頭論文報告及現場論文展示超過兩千篇等，每個研究議題皆能讓參加活動的學者專家更進一步與各相關領域的教授、專家即時的討論交換意見。職等此次有幸受邀於大會中提出口頭與壁報論文報告，很感謝國防部經費補助參與此會議。藉由參加這次會議，了解他國專家學者的研究成果及趨勢，獲益匪淺。

貳、目次

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參、本文

一、參加目的：

職等目前任職於三軍總醫院小兒部，承國防部之同意及補助出席第四屆歐洲兒科醫學會議(4th European Academy of Pediatric Societies; EAPS)於 101 年 10 月 5 日至 10 月 9 日在土耳其的伊斯坦堡舉行。此次會議延攬世界知名各領域專家以及臨床醫師、護理師和有相關學術研究領域的學者專家，自有其重要性。此次會議有超過兩千多篇的論文報告展出，在兒科醫學領域的國際會議而言有其份量與影響力。

職等於 97 年歸建小兒科部，對於兒童神經疾病相關議題有數個研究正持續在進行，也陸續於國內外包含中華民國小兒科醫學會年會、台灣小兒神經醫學會、及國際嬰幼兒癲癇症候群研討會等重要會議內發表口頭或壁報論文展示。今年職等將「以二維量位對比磁振造影評估小孩與成人顱內腦脊髓液流量」(范洪春醫師)以及「毛毛樣腦血管疾病的臨床特徵與預後討論—台灣一醫學中心的經驗」(胡智棻醫師)的研究成果投稿於本次大會， 經由大會委員會遴選後，同意於會議中以口頭及壁報論文報告，此機會實屬不易。於開會期間，職等可一方面學習與會的專家學者有關兒科醫學領域研究最新進展及臨床經驗外，同時發表自己的研究成果與國際人士交流，對於職等在臨床、教學及研究工作的收獲甚豐。非常感謝國防部經費的補助讓職大開眼界。

二、會議過程：

在為期五天的議程 整個會議包含口頭及壁報論文報告二部分的模式在進行，依照每日的議程逐一進行，並記載詳細每日會議過程之重要議題如下：

第一日議程(十月五日)：第一天的行程大會從下午開始安排一些小型的工商服務型演講， 16:00-17:25 同一時段有三場分別由 Baxter、Maquet 以及 GSK 贊助的小型研討會，題目分別是靜脈營養對於兒童生長發育的影響、使用非侵入型呼吸器 Niv Nava (noninvasive ventilation, neurally adjusted ventilatory assist)在兒童及新生兒的經驗以及多種疫苗施打對於保護兒童健康的效益與成果。職等參加第三場疫苗相關議題研討會，主要是探討六合一疫苗、結合型肺炎鏈球菌疫苗以及人類乳突病毒疫苗等三種疫苗的深入探討，發現台灣其實在提供預防保健以及疫苗注射算是非常成功且有效，且例行規定應接種的疫苗接種率可高達九成五，甚至超過歐洲部份國家，讓台灣地區兒童的醫療品質可以趨近歐洲國家的成果，僅差在台灣的社會服務政策相較於歐系國家對於兒童仍不足夠，以上所提疫苗在台灣均要自費，歐洲國家多半是列入社會福利，讓每個小朋友都能接受疫苗保護。接下來 17:30-19:00 的時段分別是由荷蘭的 Jan Hazelzet 教授(組織委員會主席)、瑞士的 Petra Huppi 教授(科學委員會主席)、瑞士的 M. Neira 教授(代表世界衛生組織)、土耳其 F. cullu 教授(代表土耳其兒科醫學會)、A. van den Hoogen 教授(代表歐洲護理學會)各致歡迎詞 10 分鐘，19:00 開始後，大家便移動至海報展覽區以及廠商服務區，職等也先行找到公布欄說明壁報張貼時間以及位置，並蒐集相關有興趣的資料後，隨即離開會場，準備參加隔天早上 08:00 開始的教育演講課程。

第二日議程(十月六日)：第一天早上參加第一堂課程為寫作文章技巧的訣竅，是由德國的 P. Hoyer 教授主講，上課內容簡明有趣，特別是針對很多非英語系國家使用英文的習慣提出很多精闢見解，特別是如何使用精準的文字呈現文章精華。接下來的第二堂課是這次醫學會最精采的演講，是邀請美國哈佛醫學院附設波士頓兒童醫院神經科主任 J.J. Volpe 教授來講解「早產兒腦病變」病生理機轉」，J.J. Volpe 教授同時也是撰寫新生兒神經學教科書的

作者，能親自聆聽大師級的演講真的收穫非常多，他所領導的團隊分成許多小組，分別研究諸多不同的病理機轉與介入保護，看起來在動物模型上有相當的成果，這讓職等相當佩服講者對於鑽研此病的”精”與”深”，也讓人佩服其能成爲大師的風範。接下來整個上午的主題也是圍繞在新生兒腦病變，由各國醫學中心的臨床研究員以動物模型探討缺氧性腦病變的分子醫學變化，例如 homocysteine、iNO、Sigma-1 receptor agonist、MTOR model 等對於缺氧性腦病變的影響與變化，所有講者均不約而同地希望由不同的切入方向，來分析缺氧性腦病變的機轉以及如何阻斷惡性循環甚至逆轉，讓職等對於此塊研究領域延伸出一些可以繼續深入探討的研究方向。下午時間從 13:30 開始有更多不同的演講同時舉行，例如有討論罕見疾病(Niemann-Pick type C, Np-C)、討論 NICU/PICU 營養問題、新生兒腦傷、兒童感染重症處置、呼吸衰竭議題、新生兒急救新觀念、神經保護、先天性心臟病、肥胖與健康等主題，職等參加神經保護這個場次。在這個主題每位講者討論的介入均不同，分別第一位是由美國的教授先做引言及題綱，接下來的講者分別是探討 XENON、CEACAM1、DEXMEDETOMIDINE 合併低溫療法的副作用以及 Erythropoietin 的安全性與成效。職等對於「XENON—神奇的藥」非常有興趣，講者是來自英國的 M. Thoresen 教授，他綜整相關文獻並提出他對此藥的看法。XENON(氙,稀有的惰性氣體元素,符號 Xe)，一般對此氣體的認識是他在光電照明上的運用爲主，早在 1980 年代就有文獻提出 XENON 對於進行中的缺氧性腦病變有神經保護效果外，甚至還能進一步改善相關神經保護因子的質與量，很特別的是這類氣體也有麻醉效果，會讓動物進入鎮靜狀態。在小鼠研究發現及早在傷害發生時介入，可以改善並增加 transcription factors (與神經元的生長、存活以及突觸連結的轉錄因子)如：pCREB (phosphorylation cAMP-Response Element-Binding protein)、Bcl-2(B cell lymphocyte gene-2)以及 BDNF(Brain-derived neurotrophy factor)的濃度，甚至有研究用 preconditioning treatment(70% Xenon and 30% Oxygen inhalation)，發現可以減輕急性腦傷的嚴重度，所以在早期能確認胎兒有缺氧性腦病變的可能時，甚至可以從產前給孕婦使用以預防腦病變發生。除了尚未有大規模的人體實驗外，此類氣體單價昂貴，也需要特殊管路來儲存，加上必須是醫療用氣體(非工業使用的可能雜質多且純度不明)，目前還有很多技術上的困難要去解決才能大量應用。

第三日議程(十月七日)：

今天早上第一堂課也是大師開講，由英國的 Z. Nagy 教授以及美國的 J. Neil 教授分別授課，討論的題目是關於核磁共振的基本原理、顯影劑機轉以及影像呈現。這堂課算是核磁共振教學的入門，除了描述基本的 T1, T2 影像外，現在核磁共振有很多 pulse sequence(脈衝序列)可以從不同的影像對比訊號分析，提供更多臨床訊息。特別是用在腦部影像更是可以鑑別確切病灶外，還能推斷發生時間以及推估預後。現在常用的影像對比包括有 IR(反轉回復)、STIR(短 TI 反轉回復)、FLAIR(腦脊髓液抑制反轉回復)、MP(磁化準備)……不勝枚舉。這些 Sequence 的主要目的是要經由影像對比變化，來加強影像上水性組織及脂肪組織的分辨，顯影劑的輔助使用可以增加對比訊號，也可以選擇性壓制部分不須評估的組織信號以及達到血管攝影技術的影像(MRA)。另外目前進階到功能性影像的分析，包括流速定量分析、微灌流影像、水分子擴散影像、神經纖維追蹤等，甚至還有合併頻譜可以分析化學物的代謝等，職(范洪春醫師)今天下午 14:10 要報的內容就是與腦部核磁共振影像分析技術有關的研究，能聽到大師講解這麼詳細，讓職等對研究更有進一步想法與認識。中間時段職(范洪春醫師)準備 slides 以及 English presentation，在 Speaker Ready’s room 準備以及預演。到了下午時間 14:10 正式在腦部影像研討的會場進行報告，準備了近 20 張 slides 要在 5 分鐘內做一個簡介，而且要把這個故事說清楚的確很不容易，這的確是不容易的挑戰。職(范洪春醫師)報告這篇研究，最重要的是要討論目前 MRI 技術中可以測定 CSF flow，對於疾病的診斷以及介入治療後的改善或是變化的分析，特別著重在成人與兒科病患的差異比較，有些初步的成果，這個場次的主席對於職所報告的內容也頗有興趣，看起來這個議題值得後續開發及深入研究。在這個場次的演講主要是跟腦部生理電氣監控有關的主題，演講者的主題包括用 MRI 的技術來分析週產期新生兒腦動脈缺氧性中風的狀況、早產兒聽力變化經由系列性腦電波追蹤的成果、足月新生兒發生缺氧性腦病變使用低溫療法時，經由長程動態視頻腦電波監視(aEEG)以及近遠紅外線頻譜(NIRS)偵測結果可以評估病人預後狀況、在高血鈉早產兒治療其血鈉變化與腦室出血的關連、在使用低溫療法的新生兒其發生急性腎臟損傷後與腦部 MRI 影像的關連性以及在有腦傷的早產兒其血液中前驅細胞(circulating progenitor cells)的初步研究報告等。在其他的演講場次安排，也發現這一次大會重點是著力在新生兒缺氧性腦病變的研究，包括影響因子、介入治療以及預後分析，除了讓治療變得更加成熟之外，也對

這個疾病真正的病生理有更進一步認識。

第四日議程(十月八日)：

今日議程重點是優秀年輕學者頒獎，以及歐洲兒科及新生兒科重症醫學會(European Society of Pediatric & Neonatal Intensive Care; ESPNIC)以及歐洲兒科研究醫學會 European Society of Pediatric Research (ESPR)有持續性大規模研究的題目做階段性報告。第一部分是優秀年輕學者的報告，目前在歐洲兒科研究最熱門的議題是新生兒缺氧性腦病變，第一位學者是研究這些早產兒長大後在數學運算上的表現與其認知功能的評估，因爲在新生兒神經科大師指出腦部在缺氧後的傷害，會影響到認知與行爲(Cognitive and behavior)，就算腦部並沒有出現病灶，但是曾經暴露的風險仍會在之後的生長發育表現出問題、另外接著一位也是不約而同的進一步討論，這些早產兒在將來課業上學習除了認知有問題外，甚至也會有過動以及注意力不集中的狀況，間接影響其學習、接著一位是討論在接受低溫療法的病人(缺氧性腦病變的新生兒)，如果病人因抽筋而接受抗癲癇藥物治療時，使用 phenobarbital 以及 lidocaine(台灣使用經驗較少, 以歐洲爲使用大宗)的藥物動力學討論，發現 phenobarbital 不會受低溫影響藥物濃度、接者一位學者是討論早期使用脂肪以及高劑量的胺基酸是否可以讓早產兒儘早進行合成代謝，以利後續生長發育(目前三總的作法是早期給少量脂肪與胺基酸，再逐日於靜脈營養中增加劑量)，在作者研究看來似乎生長曲線比較能追趕足月兒的狀況。中間一段是比較長時間的 Free posters viewing 以及午餐時段，職(胡智棻醫師)在今天有壁報展示，題目是論毛毛樣腦血管病在三總七年來的病例分析，初步結果看起來似乎是接受保守治療的人比較多，而且這些不開刀的病人在一年以上的門診時間追蹤，似乎也並沒有惡化太快，跟傳統認爲這是外科必須介入否則會很快惡化的概念不同。因爲這個病在歐洲發生率很低，頂多知道有這個病，但是對於詳細的狀況仍不熟悉，這也是地域上流行病學上很大的不同。另外剛好在兒童神經領域的海報展示區，職(胡智棻醫師)的隔壁是來自英國伯明罕大學兒童神經科主治醫師的海報作品，他一次投稿三篇且有一篇選爲口頭報告實屬不易，在他的 poster 提到兩個主題分別是 EAST/SeSAME syndrome 以及 Childhood narcolepsy 的案例分析，前者主要是 seizures, sensorineural deafness, ataxia, mental retardation, and electrolyte imbalance (hypokalemia, metabolic alkalosis, and hypomagnesemia)的縮

寫，病人會很早期(新生兒階段)就會出現抽筋跟低血鉀，所以如果出現這兩個症狀，可以檢查 potassium Kir4.1 channel(KCNJ10 gene)是否有突變，另外第二篇主要是討論兒童猝睡症的議題，作者主要是針對個案分析比較，以及分享精美連拍動態圖，讓大家對這個陌生的疾病有更進一步認識。另外還有一些作者討論兒童腦炎的流行病學以及治療跟預後，整體而言神經科的主題是比較少的。下午開始的主題職參加新生兒腦傷的實驗成果，主要都是動物模型未有人體試驗。第一位講者提出高劑量注射退黑激素時，可以增強低溫療法時神經保護的作用，但是同時也帶來低血壓的副作用、接下來的講者是討論 TNF 誘導 gene 6 protein 生成---可以對抗發炎且有腦傷的狀況，是一個很有效的神經保護因子、下一位講者則是討論發炎以及缺氧在新生兒腦部白質傷害的機轉和交互作用，所以這些介入都會讓白質 myelination 的過程受到破壞，進一步造成 PVL(腦室旁白質軟化症)，長大之後主要是造成腦性麻痺等嚴重的後遺症、接下來的講者是討論高氧狀態下對於腦部 Thioredoxin/Peroxiredoxin 系統的影響，我們知道 Thioredoxin/Peroxiredoxin 這是存在粒線體的抗過氧化氫機制(因爲呼吸鏈所產生的廢物)，當高氧狀態下產生過多的自由基也是會破壞這個系統而間接導致細胞凋亡等結果。

第五日議程(十月九日)：最後一天因爲要趕下午 13:30 的飛機必須在早上 10:30 出發(飯店至機場需要一小時車程)，故最後一天僅參加 08:00-09:00 一小時的演講，且中午的閉幕式也無法參加，感覺有些可惜。早上的一小時演講是大師開講系列 MRI 應用的第三部曲，主要是說功能性核磁造影(fMRI)的應用，目前有提出系列性追蹤 DTI(Diffusion tensor imaging)可以表現出白質的微細構造及發育走向，也有使用 SWI(susceptibility weighted imaging, 又叫 BOLD venographic imaging)的技術，可以早期偵測微出血(microbleeds)，也對 venous blood、hemorrhage 以及 iron storage 非常敏感。另外還有腦血流的偵測也可以由 ASL(Arterial spin labeling) perfusion MRI 來評估，可以提供非侵襲性且量化的數值來評估局部腦血流。現在這些技術可以提供很多功能訊息，提供臨床醫師參考，可以告訴我們不僅是目前的腦部狀況，還可以告訴我們之前發生的事情以及可以提供預後的參考。不過資訊越多，越需要臨床醫師做更多的判斷，畢竟資料是死的，必須要醫生結合臨床作綜合判斷，這也是在資訊科學爆炸的年代，需要更加小心選擇及判斷的地方，臨床醫師獲得更多資訊的

同時也必須多花心血去整理以及判讀這些資訊。

三、會議心得：

本次醫學會討論除了專題演講、口頭論文報告及現場論文展示超過兩千篇等多項活動，每個論文皆讓參加活動的學者能更進一步與各相關議題領域的教授、專家即時的討論交換意見。藉由參加這次會議，且對於一個歐洲區域的年會,如何能擴展成國際型的會議,有其值得學習之處，獲益良多。

此次會議最大出風頭的應屬新生兒缺氧性腦病變的研究與探討，除了請到哈佛醫學院附設波士頓兒童醫院神經科主任 J.J. Volpe 教授來做引言外，許多國家醫學中心的臨床研究員亦極力探討與呈現缺氧性腦病變的治療與介入以及神經保護機轉等，讓職等對於此病有更清楚的病生理學的輪廓外，會議中更提到許多利器以及藥物運用在治療這一類的新生兒身上，雖然仍有許多謎底待解，但是這個主題的報告已讓人感受到醫學上大幅的進步與創舉。整體而言，在本次會議中可以明顯感受科學進步之神速且驚人，更衝擊我們要更要向前發展，更有使命感。此外大會議程安排與會場便利與舒適，所耗的人力物力是相當龐大，感受到土耳其當局對於辦國際會議的用心與投入的心血，獲得的國際肯定與周邊效益是無法估計。我們也應學習去積極爭取各種國內外際學術會議的機會，讓三軍總醫院的知名度更向世界邁進。

四、回單位後報告情形：

本次會議職等的研究論文獲大會肯定，其中一篇題目爲「以二維量位對比磁振造影評估小孩與成人顱內腦脊髓液流量」，除既定的壁報展示外，另增口頭報告時段，不但可與專家學者做直接討論外，更代表本部研究已受到國際的肯定，對個人而言更是難得的經驗。已將相關資訊(如付件一與二)帶回並於民國 101 年 10 月 19 日星期五在所屬的單位報告，同仁皆感到興奮。

五、建議事項：

本次參與國際會議，有專題演講、專題研討會及論文海報展示等各方面議程，與來自全球各地的學者專家互相討論，吸取新知後，對於自己往後的研究工有相當大的助益。同時藉由會議發表自己的論文，認識結交國外一流學者前輩，促進國際交流，提昇本院、國軍與台灣的國際地位。

在參加這次大會之後，提供職等很多可以開發研究的項目，特別是在新生兒缺氧性腦病變的研究有許多動物模型可以建立，是可以開發研究的題材；另外在影像學的領域，很多高階影像可以提供很多精確且詳細的訊息，職等所報告的兩篇海報均與腦部影像的探討有很大關係，回想在今年度中旬小兒神經科年會有邀請到陳震宇教育長演講腦部 MRI 的應用，看起來似乎能相互呼應，而且這些影像檢查均爲非侵襲性，是可以開發臨床結合影像的另一個有趣課題，也值得繼續開發相關研究。

在此次大會中，也讓我們知道自己部份的優勢與缺陷不足之處，國內相同領域的學者應加強彼此合作與互動的關係，經由參加國際性學術會議可拓展視野並跟上國際最新進展，讓我們更具競爭力並提昇國內研究水準及國際學術地位，實爲值得鼓勵。由於補助有限，讓人對參加國際性學術會議意願減低，這是值得思考的事宜。

國際研討會議所提供的新知爲全面性、前瞻性及整合性的，且有機會與研究之學者專家當面交流對談，許多新的構想更容易被激發創造出來。也有助本院及臺灣提昇國際地位，這是長官以及全院同仁，甚至是全國人民可以思考與促進的事宜。

六、參加此會議對單位之貢獻：

職等對於兒童神經相關的研究已起步並已陸續發表，此會議除了聽取各國專家意見外，從壁報展示及部份口頭報告討論中，了解職的研究在國際的方向。職等於會議中獲得許多新的概念以及未來本部可持序進行之研究方向。例如除了兒科領域的研究外還有臨床實務照顧等，可以與其他醫院的學者先進醫師做廣泛的合作與學習。對於本院研究的投入與整合，能有幫助。

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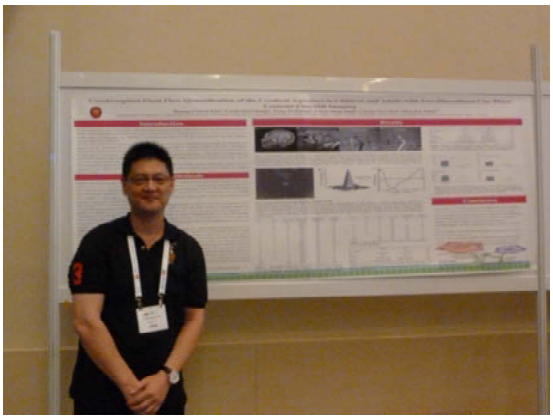
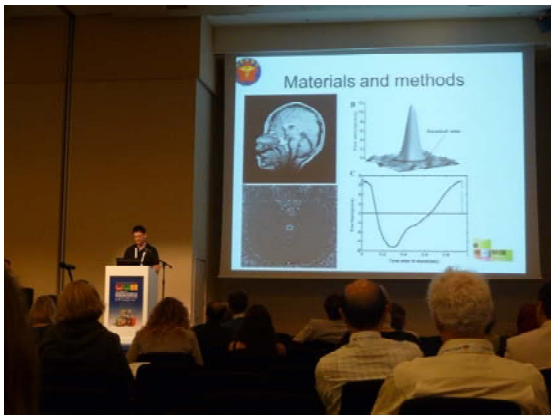
<td>  </td>
<td> 
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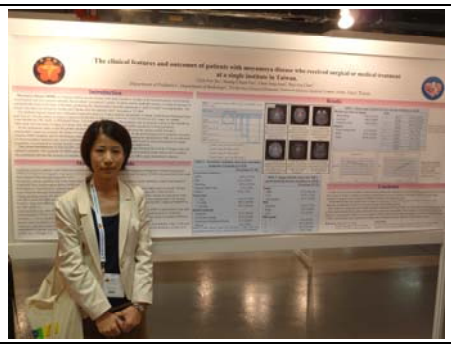
<td>  </td>
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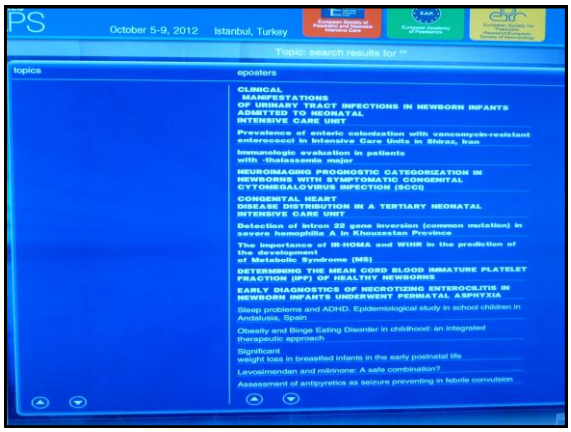
肆、附錄

附件：回單位後報告之內容(內含出國參加會議日程表及議程表)

第四屆歐洲小兒科醫學會

報告人:范洪春



EAPS

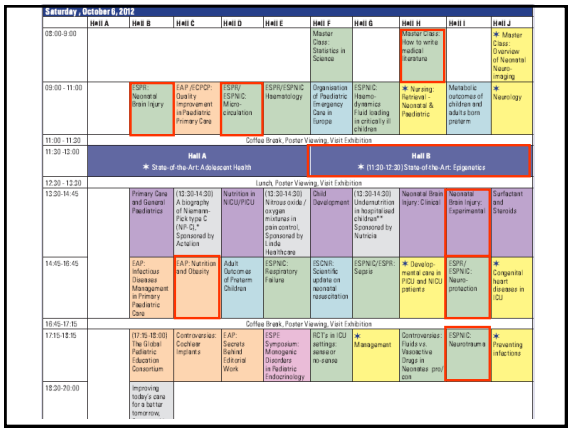
October 5-9, 2012, Istanbul, Turkey

Basic and Clinical Science/Intensive Care Medicine	Collaborarting Society Symposium	Member Submitted Symposium
Primary and General Paediatrics	State of the Art Session	Investigator Awards/Bengt Robertson
Nursing	Industry Satellite Symposium	Poster Symposium

0900 arrived at Istanbul

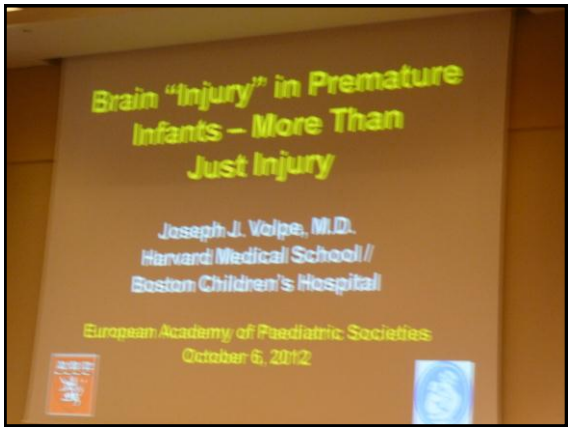
Thursday, October4, 2012	
	Hall J
08:30-17:15	ESN Teaching Course: Neonatal Brain and Development Supported by Chiesi

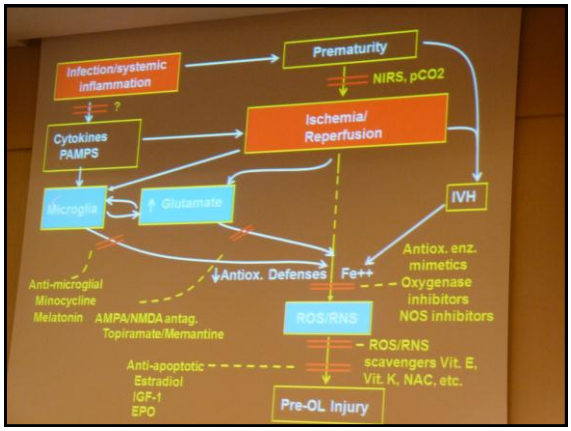
Friday, October 5, 2012	
	Hall A
08:30-16:00	
16:00-17:30	
17:30-19:00	Opening Ceremony
19:00	Welcome Reception



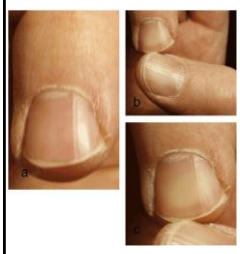
Saturday , October 6, 2012

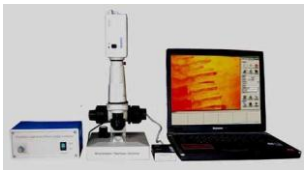
	Hall A	Hall B	Hall C	Hall D	Hall E	Hall F	Hall G	Hall H	Hall I	Hall J
08:00-9:00						Master Class: Statistics in Science		Master Class: How to write medical literature		✱ Master Class: Overview of Neonatal Neuro-imaging
09:00 - 11:00		ESPR: Neonatal Brain Injury	EAP/ECPCP: Quality Improvement in Paediatric Primary Care	ESPR/ ESPN/C: Micro-circulation	ESPR/ESPN/C Haematology	Organisation of Paediatric Emergency Care in Europe	ESPN/C: Haemo-dynamics Fluid loading in critically ill children	✱ Nursing Retrieval - Neonatal & Paediatric	Metabolic outcomes of children and adults born preterm	✱ Neurology
11:00 - 11:30	Coffee Break, Poster Viewing, Visit Exhibition									
11:30 -12:00	Hall A ✱ State-of-the-Art: Adolescent Health					Hall B ✱ (11:30-12:30) State-of-the-Art: Epigenetics				
12:30 - 13:30	Lunch, Poster Viewing, Visit Exhibition									
13:30-14:45	Primary Care and General Paediatrics	(13:30-14:30) A longevity of Niemann-Pick type C (NP-C) * Sponsored by Actelion	Nutrition in NICU/PICU	(13:30-14:30) Nitrous oxide / oxygen mixtures in pain control, Sponsored by Linde Healthcare	Child Development	(13:30-14:30) Undernutrition in hospitalised children** Sponsored by Nutricia	Neonatal Brain Injury: Clinical	Neonatal Brain Injury: Experimental	Surfactant and Steroids	
14:45-16:45	EAP: Infectious Diseases Management in Primary Paediatric Care	EAP: Nutrition and Obesity	Adult Outcomes of Preterm Children	ESPN/C: Respiratory Failure	ISCNR: Scientific update on neonatal resuscitation	ESPN/C/ESPR: Sepsis	✱ Develop-mental care in PICU and NICU patients	ESPR/ ESPN/C: Neuro-protection	✱ Congenital heart diseases in ICU	
16:45-17:15	Coffee Break, Poster Viewing, Visit Exhibition									
17:15-18:15	(17:15-18:00) The Global Paediatric Education Consortium	Controversies: Cochlear Implants	EAP: Secrets Behind Editorial Work	ESPE Symposium: Monogenic Disorders in Pediatric Endocrinology	RCTs in ICU settings: answer or non-sense	✱ Management	Controversies: Fluids vs. Vasoactive Drugs in Neonates: pro/con	ESPN/C: Neurotrauma	✱ Preventing infections	
18:30-20:00	Improving today's care for a better tomorrow.									





Microcirculation Dr R. gonzalez, Sprain



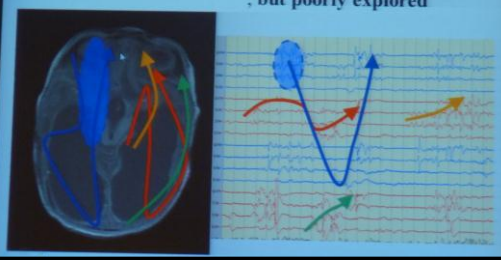


What dose the neonatal EEG tell us

S. Vanhatelo

(a)synchrony

'(a)synchrony' ☞ visually clear and often diagnostic
, but poorly explored



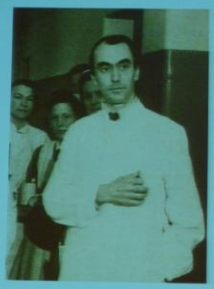
CAMBRIDGE NEUROSCIENCE

Cerebral Autoregulation in the Newborn

Dr Topun Austin

Cambridge University Hospitals NHS Foundation Trust

CAMBRIDGE NEUROSCIENCE



Mogens Fog

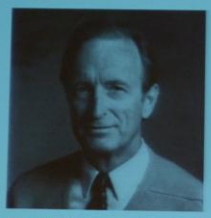
Directly observed pial vessels in cats in response to various stimuli.

↓BP: immediate vasoconstriction followed by secondary dilatation.

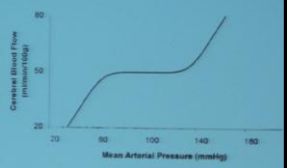
↑BP: immediate vasodilatation followed by secondary constriction.

Fog M. The relationship between the blood pressure and the tonic regulation of the pial arteries. *J. Neurol. Psychiat.* 1:187-97, 1938.

CAMBRIDGE NEUROSCIENCE



Niels Lassen

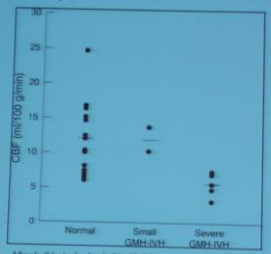


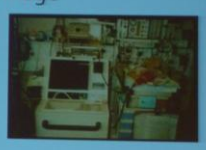
The ability to maintain cerebral blood flow in the face of a changing cerebral perfusion pressure.

Lassen N A. Cerebral blood flow and oxygen consumption in man. *Physiol. Rev.* 39:183-238, 1959.

CAMBRIDGE NEUROSCIENCE

Relationship between cerebral blood flow and periventricular haemorrhage

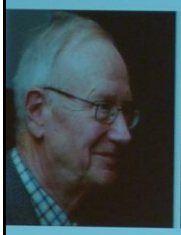




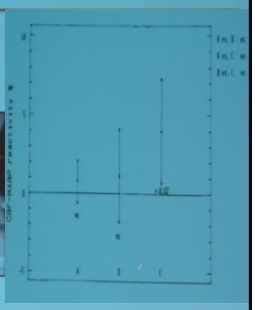
Meek JH et al. *Arch Dis Child* 1999;81:F15-F18

ADC ONLINE

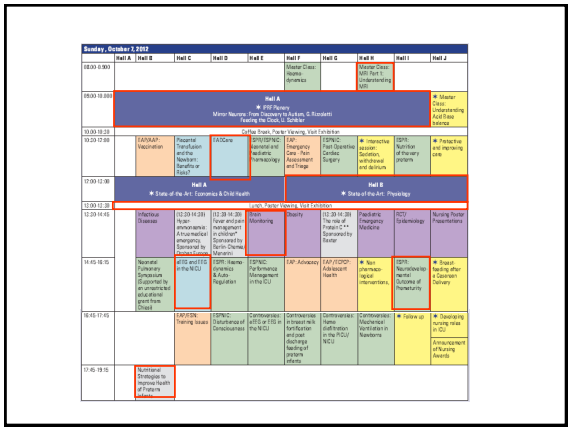
CAMBRIDGE NEUROSCIENCE

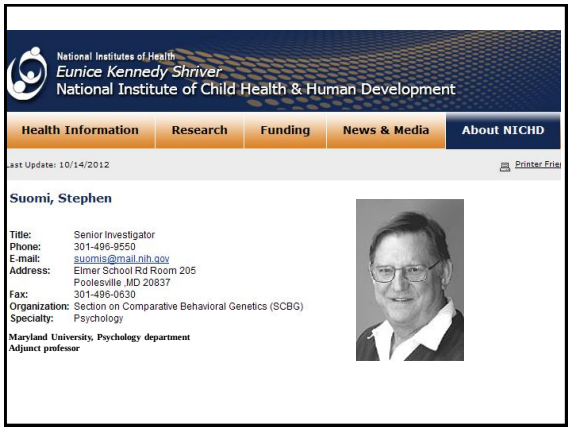


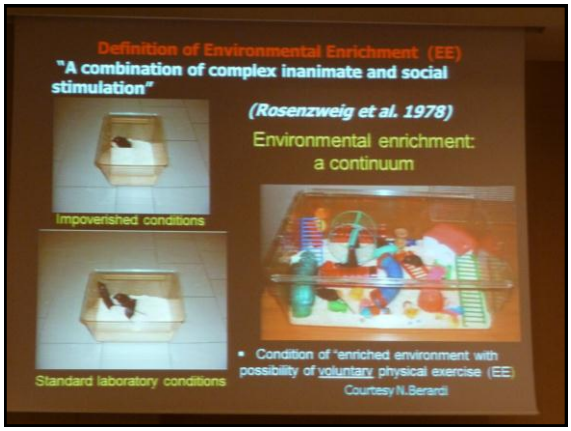
Hans Lou



mpaired autoregulation of cerebral blood flow in the
istressed newborn infant



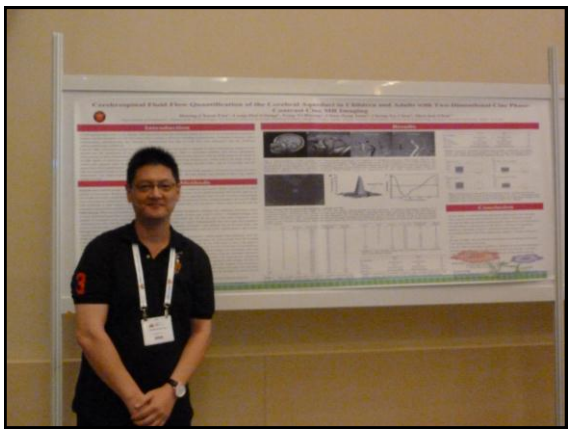


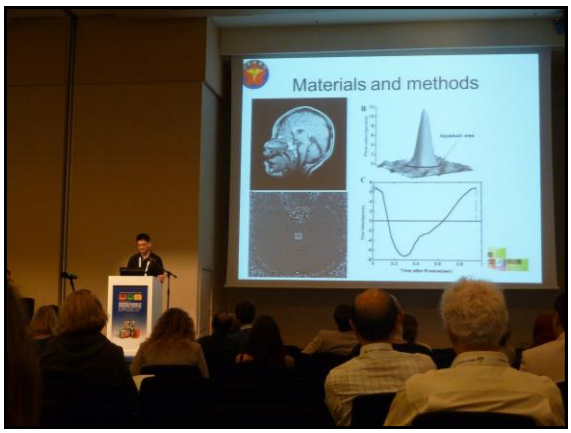


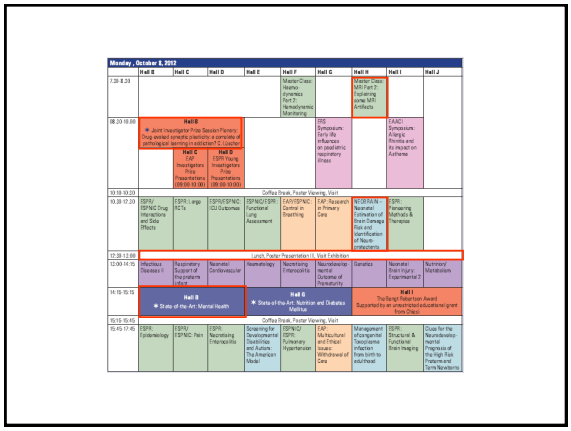
CSF Flow Quantification of the Cerebral Aqueduc in Children and Adults with 2-D Cine Phase-Contrast MR Imaging

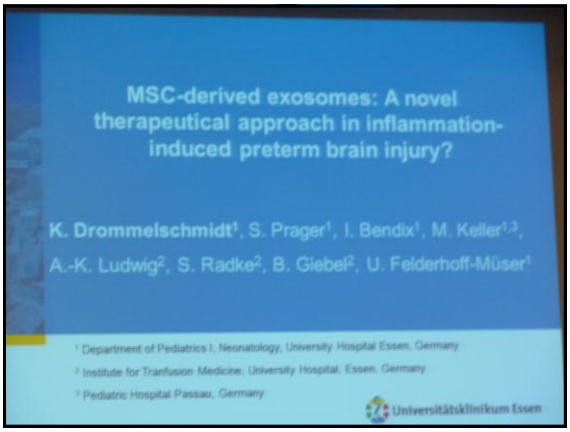
Hueng-Chuen Fan[1] , Lung-Hui Giiang[2] , Teng-Yi Huang[3] , Chun-Jung Juan[2], Cheng-Yu Chen[2] , Shyi-Jou Chen[1]

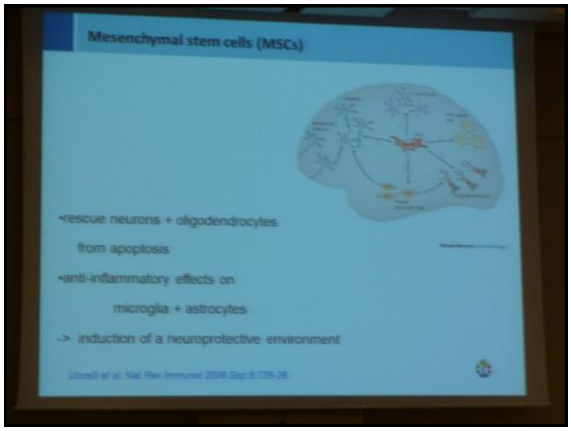
Department of Pediatrics[1] Department of Radiology[2] Tri-Service General Hospital, National Defense Medical Center, Neihu, Taipei, Taiwan.
Department of Electrical Engineering[3] National Taiwan University, Taipei, Taiwan.

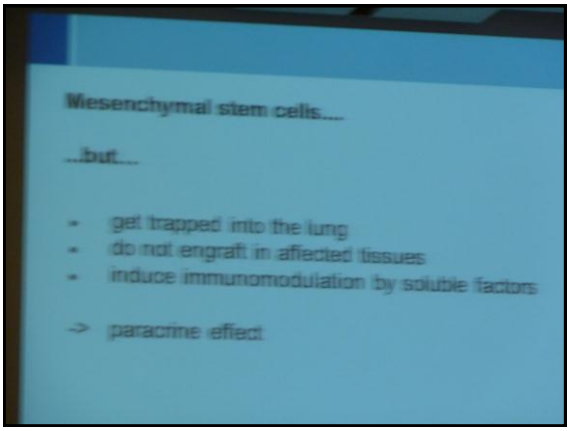


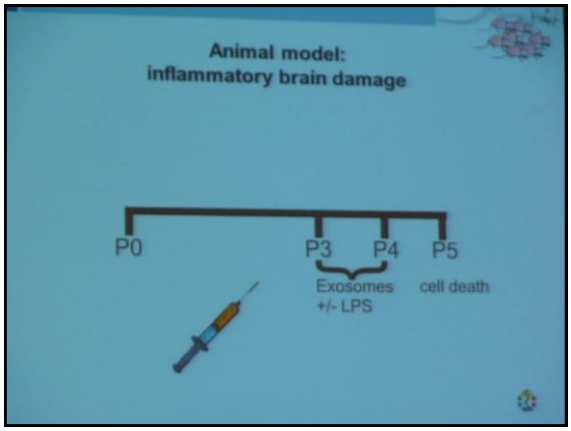


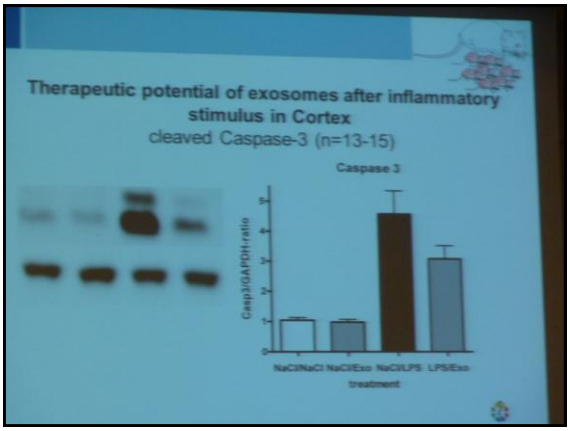

Monday, October 8, 2012
Hall B
Hall C
Hall D
Hall E
Hall F
Hall G
Hall H
Hall I
Hall J
Coffee Break, Poster Viewing, Visit
Lunch, Poster Presentation I, Visit Exhibition
Coffee Break, Poster Viewing, Visit

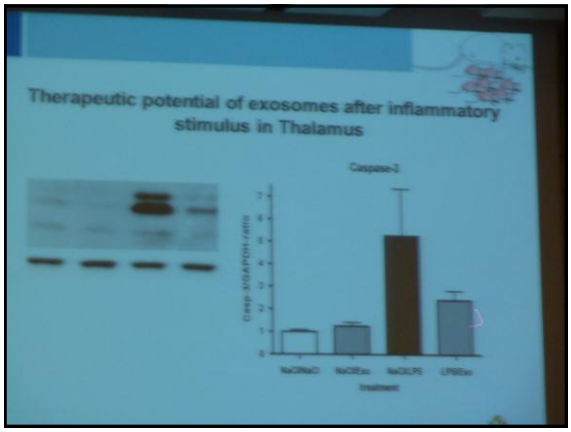

MSC-derived exosomes: A novel therapeutical approach in inflammation-induced preterm brain injury?
K. Drommelschmidt[1], S. Prager[1], I. Bendix[1], M. Keller[1,3], A.-K. Ludwig[2], S. Radke[2], B. Giebel[2], U. Felderhoff-Müser[1]
[1] Department of Pediatrics I, Neonatology, University Hospital Essen, Germany
[2] Institute for Tranfusion Medicine, University Hospital, Essen, Germany
[3] Pediatric Hospital Passau, Germany
Universitätsklinikum Essen


Mesenchymal stem cells (MSCs)
•rescue neurons + oligodendrocytes from apoptosis
•anti-inflammatory effects on microglia + astrocytes
-> induction of a neuroprotective environment

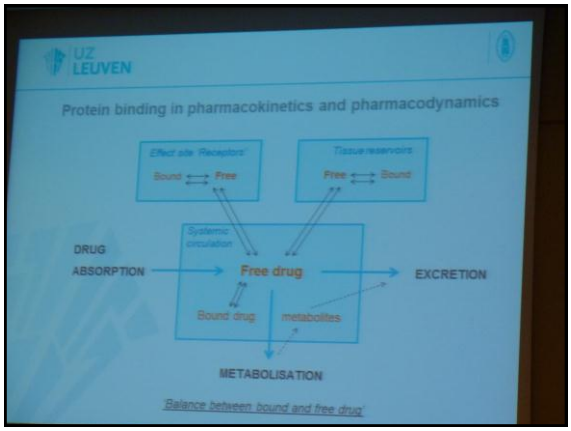

Mesenchymal stem cells....
...but....
- get trapped into the lung
- do not engraft in affected tissues
- induce immunomodulation by soluble factors
-> paracrine effect

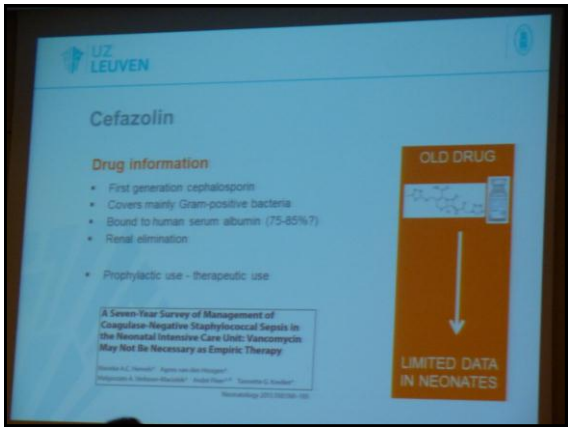

Animal model:
inflammatory brain damage
P0
P3
P4
P5
Exosomes
+/- LPS
cell death

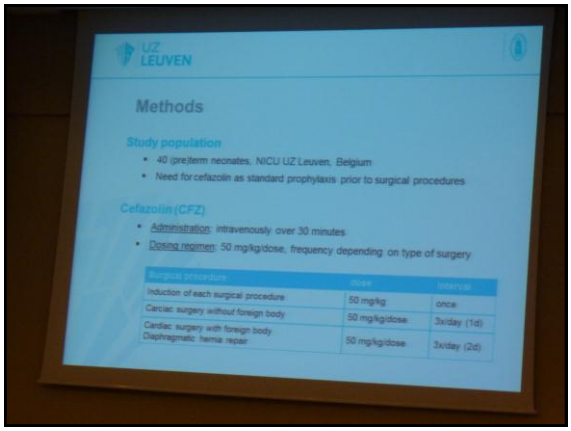

Therapeutic potential of exosomes after inflammatory stimulus in Cortex
cleaved Caspase-3 (n=13-15)
Caspase 3
Casp3/GAPDH-ratio
NaCl
NaCl/Exo
NaCl/LPS
LPS/Exo
treatment

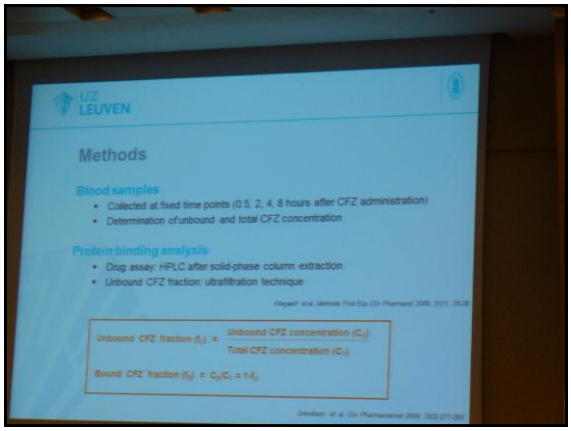

Therapeutic potential of exosomes after inflammatory stimulus in Thalamus
Caspase-3
Treatment

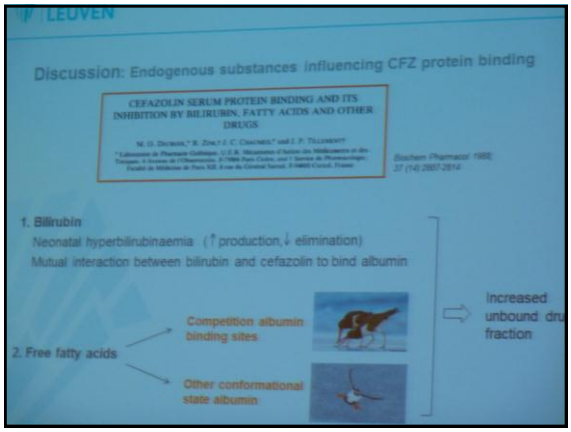

UZ LEUVEN
Cefazolin plasma protein binding and its covariates in neonates
UNIVERSITY HOSPITALS LEUVEN

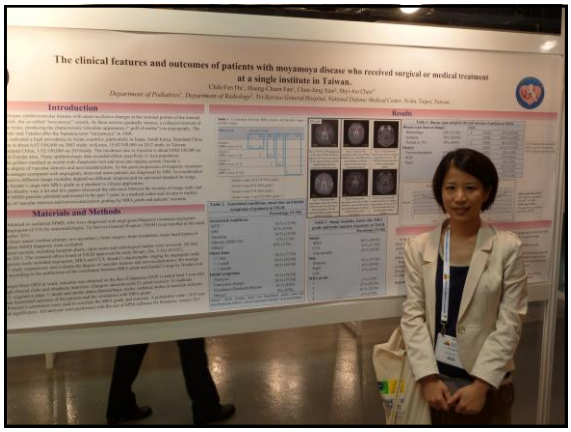

UZ LEUVEN
Protein binding in pharmacokinetics and pharmacodynamics
Effect site 'Receptors'
Bound ⟷ Free
Tissue reservoirs
Free ⟷ Bound
Systemic circulation
DRUG
ABSORPTION
Free drug
EXCRETION
Bound drug
metabolites
METABOLISATION
Balance between bound and free drug


UZ LEUVEN
Cefazolin
Drug information
First generation cephalosporin
Covers mainly Gram-positive bacteria
Bound to human serum albumin (75-85%?)
Renal elimination
Prophylactic use - therapeutic use
A Seven-Year Survey of Management of Coagulase-Negative Staphylococcal Sepsis in the Neonatal Intensive Care Unit: Vancomycin May Not Be Necessary as Empiric Therapy
OLD DRUG
LIMITED DATA IN NEONATES


UZ LEUVEN
Methods
Study population
40 (pre)term neonates, NICU UZ Leuven, Belgium
Need for cefazolin as standard prophylaxis prior to surgical procedures
Cefazolin (CFZ)
Administration: intravenously over 30 minutes
Dosing regimen: 50 mg/kg/dose, frequency depending on type of surgery
Surgical procedure
dose
interval
Induction of each surgical procedure
50 mg/kg
once
Cardiac surgery without foreign body
50 mg/kg/dose
3x/day (1d)
Cardiac surgery with foreign body
Diaphragmatic hernia repair
50 mg/kg/dose
3x/day (2d)


UZ LEUVEN
Methods
Blood samples
Collected at fixed time points (0.5, 2, 4, 8 hours after CFZ administration)
Determination of unbound and total CFZ concentration
Protein binding analysis
Drug assay: HPLC after solid-phase column extraction
Unbound CFZ fraction: ultrafiltration technique
Unbound CFZ fraction (f_u) = Unbound CFZ concentration (C_u) / Total CFZ concentration (C_T)
Bound CFZ fraction (f_b) = $C_b/C_T = 1-f_u$





IMMUNOLOGIC EVALUATION IN PATIENTS WITH β-THALASSEMIA MAJOR

A. Ahmadiafshar, A. Ghadipasha, N. Mousavinasab, *Iran*

Background: Several studies demonstrated some alterations in immune system of β-thalassemia major patients. The aim of this study was to assess the immunologic markers of these patients in comaprision with control group.

Method: Immunologic markers including CD8, CD4 [T-lymphocyte],CD19 [B-lymphocyte], and CD56 [NK cell]) were assessed in thirty patients with β-thalassemia major (18 male and 12 female; under 18 years) and similar age and sex matched healthy controls. All patients had no infectious, malignant or chronic diseases. Complete blood count, and serum ferritine and iron also were measured. Statistical analysis performed by SPSS (v.15) software.

Results: We did not found any abnormality in cellular and humoral system. However, mean CD56 level in thalassemia group were significantly lower than control group (6.54±2.87% vs. 9.13±4.01%; p=0.006). Mean CD4 in thalassemia patients with spelenectomy was significantly lower than patients without splenectomy (31.8±6.55% vs. 40.3±9.2%; p=0.02).

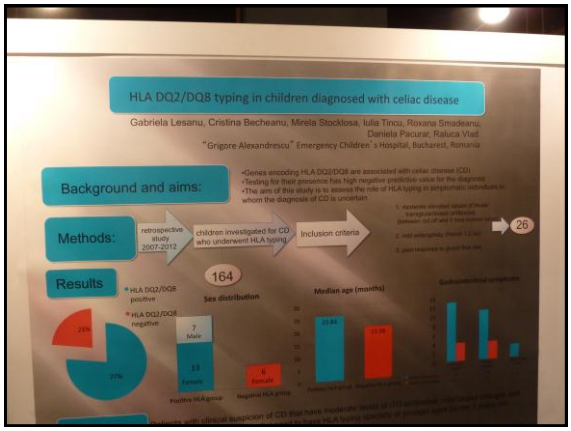
Conclusion: NK cell marker in the patients with β-thalassemia major is lower than healthy individuals, that may be responsible for defects in innate immune system.

Immunologic markers in β- thalasemic patients and controls

Markers	Patients	Controls
CD4	38.59±6.08	37.66±9.31
CD8	21.13±7.3	21.02±5.96
CD19	15.13±5.43	13.15±4.42
CD56	6.54±2.87	9.13±4.01

Immunologic markers in splenectmized and not splenectomised patients

Markers	Splenectomized	Not splenectomized
CD4	31.83±6.86	40.38±9.2
CD8	21.9±7.43	17.75±8.2
CD19	14.4±6.43	18.01±4.6
CD56	6.83±2.9	5.38±2.56



CORRELATION BETWEEN HELICOBACTER PYLORI SEROLOGIC TESTS WITH RAPID URASE AND HISTOLOGY IN CHILDREN

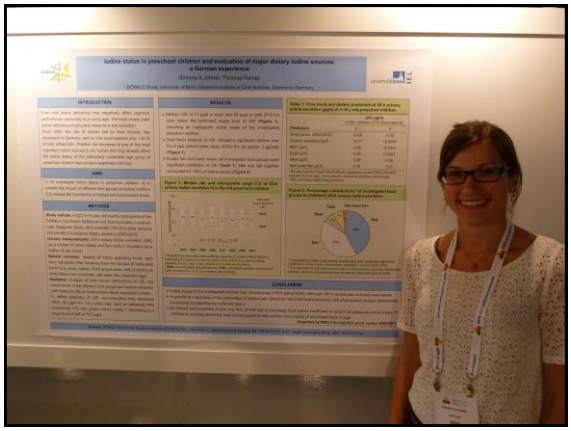
A. Rezaianzadeh, M.H. Imanieh, S.M. Dehghani, M. Haghighat, *Iran*

Background: Helicobacter pylori infection is a common infection that affects the human being. This infection also affects the children. Different diagnostic methods such as serology, stool antigen detection, rapid urease test and histology detect this microorganism. The aim of this study was to determined correlation between serology and histology/rapid urease test.

Methods: Two groups were selected and matched for age and sex. Seventy seven children with confirmed H. pylori infection as they had positive rapid urease test and histology concomitantly were compared with 77 healthy children. Both case and control groups checked serologically for detection of anti H. pylori IgM, IgG and IgA antibody titers.

Results: Three Cut-off points were 3.3 U/ML for IgA, 6.4 U/ML for IgM, and 9.9 U/ML for IgG. Antibody titers were compared with gold standard methods including histologic and rapid ureas tests. IgA level had a sensitivity of 64%, specificity of 58%, accuracy of 59.3%, positive predictive value of 31.5%, and negative predictive value of 76.9%. IgM level had a sensitivity of 76%, specificity of 36.1%, accuracy of 74.2%, positive predictive value of 31.5%, and negative predictive value of 76.9%. IgG level had a sensitivity of 58.6%, specificity of 61.3%, accuracy of 60.6%, positive predictive value of 36.9%, and negative predictive value of 79.3%.

Conclusion: These antibodies have a relatively high negative predictive value and a low positive predictive value. So, their negative results are more valuable. The most sensitive



Type and location of neural tube defects and other malformations after prenatal antiepileptic drug exposure: a case series

Margriet van Dijk [1], Sasia Bulk [2], Carla van Oppen [3], Rob Heerdink [1], Toine Egberts [1], Dick Lindhout [2]
Department of [1] Clinical Pharmacy and [2] Medical Genetics, [3] Obstetrics and Perinatology, UMC Utrecht, The Netherlands
University Medical Center Utrecht

Introduction

Valproic acid (VPA) and carbamazepine (CBZ) are associated with an increased risk of neural tube defects (NTDs) in the exposed fetus. Little is known about the type and location of these NTDs and associated CNS and non-CNS malformations, and whether these are drug-dependent. This study aims to fill this gap of knowledge, helping clinical management, counseling and understanding of pathogenesis.

Methods

Diagnosed NTDs in pregnancies in which an antiepileptic drug (AED) was used during first trimester pregnancy were collected from 1970 – 2012 from multiple sources in The Netherlands. Type and location of the NTDs, associated CNS and non-CNS major malformations and relevant patient characteristics were analysed.

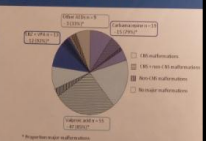


Figure 2 Antiepileptic drugs and associated other major malformations

Results

96 pregnancies were included: six (6%) cases of anencephaly (all except one associated with other AEDs than VPA and CBZ) and 90 (94%) spina bifida cases (from thoracolumbar to sacral). NTDs after exposure to CBZ or VPA were mostly sacral or lumbosacral. In VPA+CBZ polytherapy patients the location distribution was more dispersed, with proportionally more lumbar or sacral and less lumbosacral patients. Spina bifida aperta constituted 79%, 93%, 100% of the NTD cases with CBZ, VPA or CBZ+VPA respectively. In pregnancies with CBZ and/or VPA the occurrence of at least one additional major malformation (mostly CNS related) was high: 79% (CBZ), 85% (VPA) and 92% (CBZ + VPA).

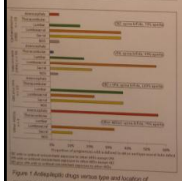


Figure 1 Antiepileptic drugs versus type and location of neural tube defects

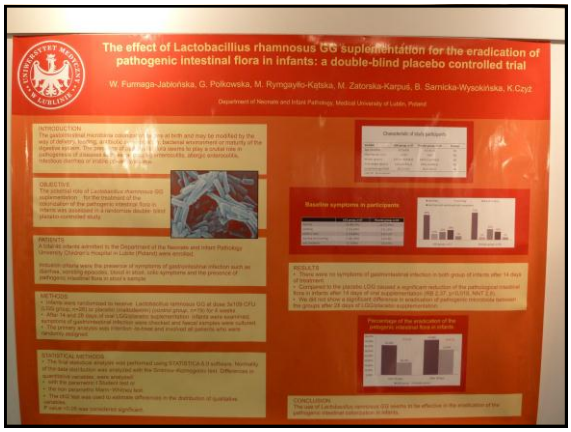
Conclusion

NTDs after exposure to CBZ or VPA were mostly caudally located.
Polytherapy with CBZ and VPA was associated with a slightly different location distribution, predominantly sacral or lumbar and less lumbosacral.
The rate of additional CNS and non-CNS malformations is high.
These results suggest possible differences in pathogenic mechanisms depending on exposure type.
The data are also helpful in pre- and post pregnancy counseling, prenatal diagnosis and clinical management.

More information: on demand

The effect of Lactobacillius rhamnosus GG supplementation for the eradication of pathogenic intestinal flora in infants: a double-blind placebo controlled trial

W. Furmaga-Jabłońska, G. Polkowska, M. Rymgayllo-Kętska, M. Zatorska-Karpuś, B. Samicka-Wysokińska, K.Czyż
Department of Neonate and Infant Pathology, Medical University of Lublin, Poland



ENHANCEMENT OF LINEAR GROWTH AND WEIGHT VELOCITY BY CYPROHEPTADINE IN CHILDREN WITH IDIOPATHIC GROWTH HORMONE DEFICIENCY RECEIVING THIS HORMONE

K.S. Najib, Z. Karamizadeh, *Iran*

Background: The current study examined the hypothesis that Cyproheptadine can enhance linear growth and increase weight velocity in children with idiopathic GH deficiency.

Method: 10children with idiopathic GH deficiency received Cyproheptadine 0.3mg/kg three times per week plus GH0.6U/kg/day for six days a week for1-year period, alternatively (GH plus Cyproheptadine for first and third trimesters, and GH plus placebo for second and fourth trimesters). Weight velocity and linear growth were assessed at baselineand at end of every trimester.

Result: The repeated measure ANOVA test showed significant differences in weight velocity across the study trimesters so that the increase in weight velocity within first and third trimesters were significantly higher than other time intervals (ΔWV: first trimester 1.51 ± 0.61kg; second trimester 1.13 ± 0.46 kg; third trimester 1.87 ± 0.65kg; and fourth trimester 0.74 ± 0.34 kg, p = 0.026). Similar trend was also observed regarding changes in linear growth that the increase in children height was significantly higher in first and third trimesters compared with other trimesters (ΔLG: first trimester 2.40 ± 0.39cm; second trimester 1.65 ± 0.41cm; third trimester 2.00 ± 0.88kg; and fourth trimester 1.30 ± 0.48 kg, p = 0.029). The standard deviation of linear growth was gradually decreased during the study trimesters (4.75, 4.50, 4.25, and 3.88cm, respectively, however the changes in this parameter was not different between the two drug regimens.

Conclusion: Our study showed improved linear growth and weight velocity following administration of Cyproheptadine in children given GH because of their GH deficiency.

CLINICAL COURSE AND DRUG SUSCEPTIBILITY FOR INFANTS WITH UREPALSMA INFECTION

S.M. Lee, H.S. Eun, R. Namgung, M.S. Park, K.I. Park, C. Lee, *Republic of Korea*

Objectives: Ureaplasma species were associated bronchopulmonary dysplasia in preterm infants. We aim to analyze the antibiotic susceptibility of ureaplasma urealyticum and clinical manifestations in preterm infants with ureaplasma urealyticum colonization.

Methods: In a retrospective study, 416 preterm infants (< gestation 32 wk) and their mothers admitted to Severance Children's Hospital and Gangnam Severance Hospital NICU between Jan 2003 to Jun 2011 were reviewed. Ureaplasma test was done by culture for mothers and PCR in urine and tracheal aspirates for preterm infants. Ureaplasma colonization was confirmed 7.5% of infants, and 31% of the mothers. If positive result was noted, all infants were initially treated with erythromycin empirically.

Results: Thirty one infants who had positive ureaplasma PCR test (28.3±3.1wk, 1050±490g) and 385 infants with negative test (29.0±3.2 wk, 1190±550g) were recruited as controls. Infants with ureaplasma infection had longer durations of oxygen administration (p=0.039) and mechanical ventilation (p=0.041). The incidence of pathologic chorioamnionitis were significantly higher (p< 0.001). Infants with ureaplasma infection had higher incidence of moderate/severe BPD. For antimicrobial susceptibility, 23% of erythromycin resistance, 16% of zithromycin resistance, 38% of ciprofloxacin resistance and no jasamycin resistance were shown. Among 31 infants with erythromycin treatment, 18 (58%) of susceptible, 6 (19%) of intermediate were cured after 13 days of treatment, and 4 showed poor response erythromycin treatment, 2 changed to josamycin and 2 infants to clarithromycin and all were completely treated.

Conclusion: Ureaplasma colonized infants showed higher incidence of BPD. Proper antimicrobial use may reduce the morbidity associated with ureaplasma colonization.

Subjects Characteristics

	Ureaplasma (+)	Ureaplasma (-)	P-value
Gestational age(wk)	28.3 ± 3.1	29.0 ± 3.2	0.563
Birth weight (g)	1050 ± 490	1190 ± 550	0.089
Sex (M/F)	20/11	201/184	0.595
C/sec/NSVD (n)	22/9	278/97	0.124
IUGR (n)	6	25	0.041
Death (n)	5	8	0.245
Oxygen day (d)	**48.1 ± 35.8**	**41.1 ± 38.6**	0.039
Ventilator day (d)	**28.0 ± 44.2**	**21.2 ± 21.7**	0.041
Hospital day (d)	109.8 ± 40.2	91.8 ± 45.2	0.058

Maternal Characteristics

	Ureaplasma (+)	Ureaplasma (-)	P-value
Antenatal steroid	28 (90%)	355 (92%)	0.891
Pathologic Chorioamnionitis	31 (100%)	121 (31%)	0.001
PROM	14 (45%)	154 (40%)	0.438
PIH	9 (29%)	85 (22%)	0.564

Antimicrobial Susceptibility

Antimicrobial agent	Susceptible
Doxycycline	29 (94%)
Josamycin	31 (100%)
Ofloxacin	24 (76%)
Erythromycin	18 (58%)
Tetracycline	28 (90%)
Ciprofloxacin	16 (52%)
Azithromycin	22 (71%)
Clarithromycin	17 (54%)

VANCOMYCIN RESISSTANT ENTEROCOCCI (VRE) COLONISATION IN A NICU

F.Guven, A. Say, ... Degirmenci, N. Uygur Kulcu, T. Sabuncu, M.Inalhan

Zeynep Kamil Maternity and Children Diseases Training and Research State Hospital, İstanbul, Turkey

OBJECTIVE: Vancomycin resistant enterococci (VRE) are a cause of nasocomial infections in hospitals. VRE ca... gene for vancomycin resistance to more virulent pathogens such as staphylococcus aureus both invitro and in vi... VRE colonization in children include young age, use of invasive devices, antimicrobial drug administration, immun... birth weight and underlying malignancy.
Nowadays antibiotic resistant bacteria are found in community but more frequently in hospital environments. Develo... bacteria (gram positive cocci, esp. Enterococci) to glycopeptide antibiotics are becoming important.
On behalf of infection, control after detection of VRE surveillance studies must be performed. To determine and con... colonization in our NICU the rectal swabs of 760 neonates were taken and send to the laboratory at admission fo...

FINDINGS: VRE was isolated in 12 (1,6%) of the neonates. 6 of the neonates (50%) were born in public hospital a... born in private hospital. To prevent the outbreaks in NICU we isolated the babies. None of the babies were treated... The blood cultures were negative in all of them. Inspite of positive rectal colonisation. The diagnosis of these babies... 7/12 neonatal jaundice, 2/12 neonatal dehydration, 1/12 urinary tract infection, 1/12 bronchopneumonia, 1/12 pn... Median hospital stay was 10 days (3-29 days). 2/3 of newborn were born C/S delivery, there was no hospitalization...

CONCLUSION: We wanted to emphasize the uncontrolled use of antibiotics can be a problem in future. There... studies should be performed.

Diuretic use in Neonatal Chronic Lung Disease in England

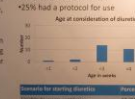
J. Chahal 1, D. Jennings 2, M.A. Turner 1 *Institute(s): 1 Neonatal Unit, Liverpool Women's NHS Foundation Trust, Liverpool, 2 National Perinatal Epidemiology Unit (NPEU), University of Oxford, Oxford, UK*

AIM
To assess diuretic usage in neonatal units in England in relation to indications for use, type and dosage regimen.

Previous studies have shown wide variability using hypothetical scenarios for analysis[1].

METHOD
An electronic survey was designed using Survey Monkey online survey tool. This was initially trialled in 5 different units and suggestions acted upon. An email was sent via the Medicines for Children Research Network Neonatal Network (MRCNNN) to neonatal units in England (n=108) with links to the survey.

RESULTS
•66 responded (61%) 55 unique units
•5x did not use diuretics
•25% had a protocol for use

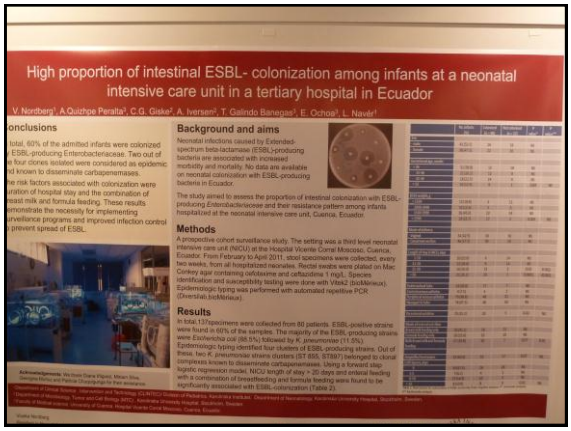


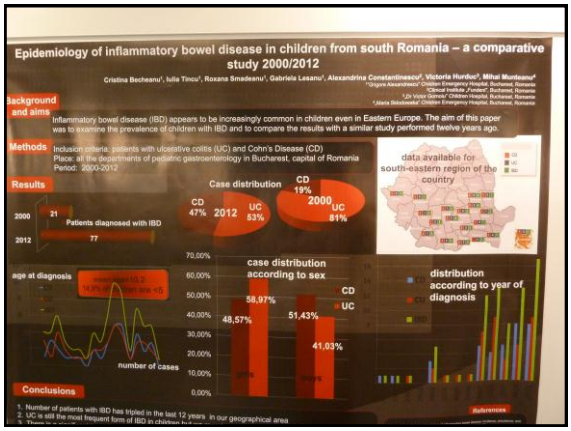
Scenario for starting diuretics	Percentage(No)
Unable to wean ventilation	47 (26)
Unable to extubate	44 (24)
Chronic Lung Disease - O_2 requirement after 36 weeks	33 (18)
CLD with PDA	34 (32)
CLD without PDA	31 (17)

•70% had no rule as to when to stop diuretics
•84% use furosemide when the baby requires intravenous treatment
•48% use a combination of spironolactone and chlorthiazide in babies who are fully fed

	Total daily dose (mg/kg/24h)	
	Median	Range
Furosemide	2	1 - 4
Spironolactone	2	1 - 10
Chlorthiazide	20	2 - 50
Hydrochlorthiazide	30	20 - 40

DISCUSSION
•Good response rate therefore likely to reflect national use.
•Half respondents would use diuretics to aid weaning/extubation and would therefore be a good target population for a clinical trial.
•Median dosage of furosemide, spironolactone and chlorthiazide are in line with those recommended in the BNFC however there was marked variation as shown in range.
•This study provides useful baseline information for a much needed multi-centre RCT on the efficacy of diuretics in CLD





CORRELATION BETWEEN HELICOBACTER PYLORI SEROLOGIC TESTS WITH RAPID URASE AND HISTOLOGY IN CHILDREN

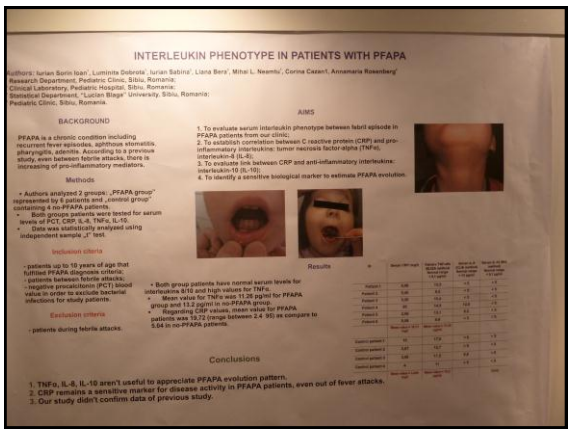
A. Rezaianzadeh, M.H. Imanieh, S.M. Dehghani, M. Haghighat, *Iran*

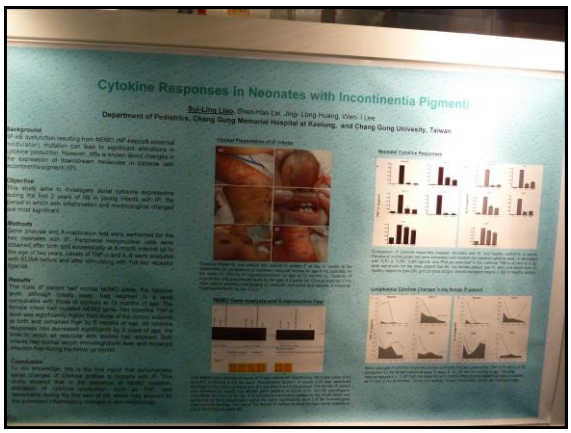
Background: Helicobacter pylori infection is a common infection that affects the human being. This infection also affects the children. Different diagnostic methods such as serology, stool antigen detection, rapid urease test and histology detect this microorganism. The aim of this study was to determined correlation between serology and histology/rapid urease test.

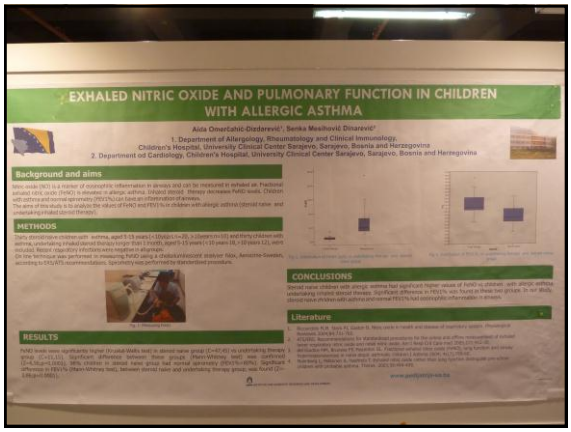
Methods: Two groups were selected and matched for age and sex. Seventy seven children with confirmed H. pylori infection as they had positive rapid urease test and histology concomitantly were compared with 77 healthy children. Both case and control groups checked serologically for detection of anti H. pylori IgM, IgG and IgA antibody titers.

Results: Three Cut-off points were 3.3 U/ML for IgA, 6.4 U/ML for IgM, and 9.9 U/ML for IgG. Antibody titers were compared with gold standard methods including histologic and rapid ureas tests. IgA level had a sensitivity of 64%, specificity of 58%, accuracy of 59.3%, positive predictive value of 31.5%, and negative predictive value of 76.9%. IgM level had a sensitivity of 76%, specificity of 36.1%, accuracy of 74.2%, positive predictive value of 31.5%, and negative predictive value of 76.9%. IgG level had a sensitivity of 58.6%, specificity of 61.3%, accuracy of 60.6%, positive predictive value of 36.9%, and negative predictive value of 79.3%.

Conclusion: These antibodies have a relatively high negative predictive value and a low positive predictive value. So, their negative results are more valuable. The most sensitive antibody is IgM and most specific antibody is IgG.







ENHANCEMENT OF LINEAR GROWTH AND WEIGHT VELOCITY BY CYPROHEPTADINE IN CHILDREN WITH IDIOPATHIC GROWTH HORMONE DEFICIENCY RECEIVING THIS HORMONE

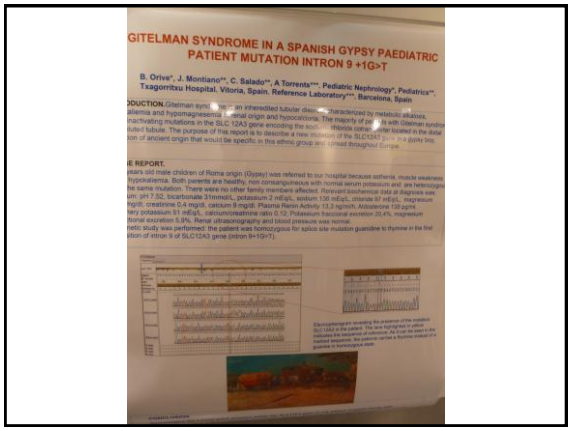
K.S. Najib, Z. Karamizadeh, *Iran*

Background: The current study examined the hypothesis that Cyproheptadine can enhance linear growth and increase weight velocity in children with idiopathic GH deficiency.

Method: 10children with idiopathic GH deficiency received Cyproheptadine 0.3mg/kg three times per week plus GH0.6U/kg/day for six days a week for1-year period, alternatively (GH plus Cyproheptadine for first and third trimesters, and GH plus placebo for second and fourth trimesters). Weight velocity and linear growth were assessed at baselineand at end of every trimester.

Result: The repeated measure ANOVA test showed significant differences in weight velocity across the study trimesters so that the increase in weight velocity within first and third trimesters were significantly higher than other time intervals (ΔWV: first trimester 1.51 ± 0.61kg; second trimester 1.13 ± 0.46 kg; third trimester 1.87 ± 0.65kg; and fourth trimester 0.74 ± 0.34 kg, p = 0.026). Similar trend was also observed regarding changes in linear growth that the increase in children height was significantly higher in first and third trimesters compared with other trimesters (ΔLG: first trimester 2.40 ± 0.39cm; second trimester 1.65 ± 0.41cm; third trimester 2.00 ± 0.88kg; and fourth trimester 1.30 ± 0.48 kg, p = 0.029). The standard deviation of linear growth was gradually decreased during the study trimesters (4.75, 4.50, 4.25, and 3.88cm, respectively, however the changes in this parameter was not different between the two drug regimens.

Conclusion: Our study showed improved linear growth and weight velocity following administration of Cyproheptadine in children given GH because of their GH deficiency.



URINARY NGAL (UNGAL) AT BIRTH IS RELATED TO BRONCHOPULMONARY DYSPLASIA IN PRETERM INFANTS

S. Vandini, G. Aquilano, I. Capelli, **L.T. Corvaglia**, S. Galletti, G. La Manna, *Italy*

Background and aims: Bronchopulmonary dysplasia (BPD) is a chronic lung disease associated with premature birth and early lung injury. The pathogenesis is multifactorial, including fluid and electrolytes balance that is dependent to renal development during the first weeks of life.

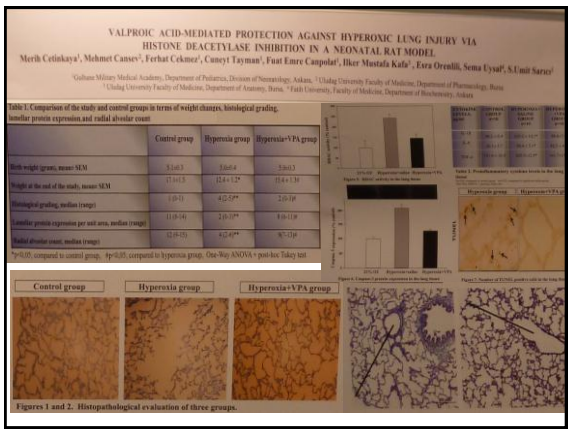
We previously found a correlation between renal development during the first weeks of life and urinary neutrophil gelatinase-associated lipocalin (UNGAL) at birth in very low birth weight infants (VLBW). The aim of this study was to examine the relationship between urinary (UNGAL) and serum NGAL (SNGAL) at birth and BPD.

Methods: UNGAL and SNGAL were determined at birth in VLBW. BPD was defined as oxygen need at 36 week gestational age (GA). Statistical analysis was performed with chi square.

Results: 44 VLBW admitted at birth in our NICU were included in the study; 2 of them died during stay in NICU. 20/42 infants developed BPD: all were born at ≤ 29 week (GA) and 14 of them needed diuretics. High values of UNGAL (> 100 ng/ml) were observed more frequently among BPD treated with diuretics infants than in the other subjects (57% vs 28%, p=0,04).

High levels of SNGAL (>150 ng/ml) were not significantly more frequent in VLBW with BPD.

Conclusions: These preliminary data show that high UNGAL at birth is a marker of impaired renal development and fluid balance in preterm newborns, that determine increased lung water and consequently contribute to BPD development.



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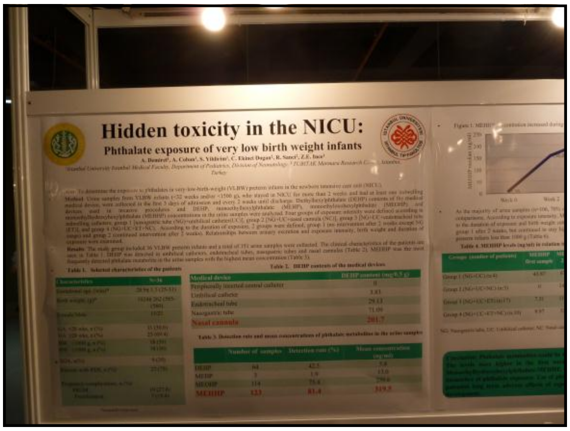
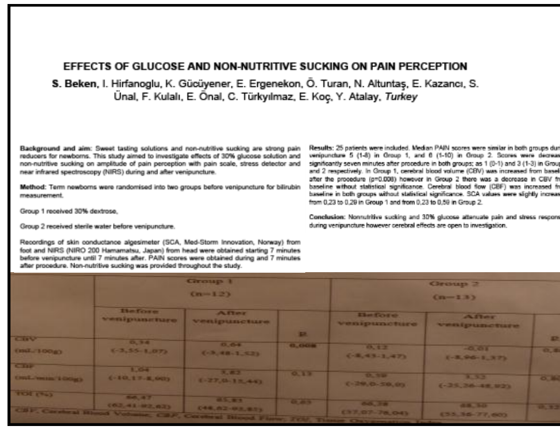
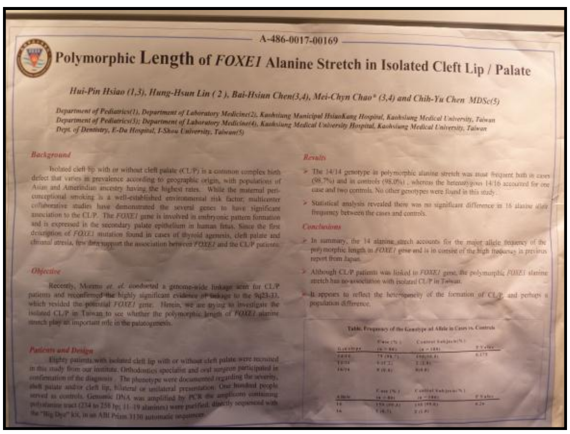

Hidden toxicity in the NICU:
Phthalate exposure of very low birth weight infants


EFFECTS OF GLUCOSE AND NON-NUTRITIVE SUCKING ON PAIN PERCEPTION
S. Beken, I. Hirfanoglu, K. Gücüyener, E. Ergenekon, Ö. Turan, N. Altuntaş, E. Kazancı, S. Ünal, F. Kulalı, E. Önal, C. Türkyılmaz, E. Koç, Y. Atalay, Turkey
Background and aim: Sweet tasting solutions and non-nutritive sucking are strong pain reducers for newborns. This study aimed to investigate effects of 30% glucose solution and non-nutritive sucking on amplitude of pain perception with pain scale, stress detector and near infrared spectroscopy (NIRS) during and after venipuncture.
Method: Term newborns were randomised into two groups before venipuncture for bilirubin measurement.
Group 1 received 30% dextrose,
Group 2 received sterile water before venipuncture.
Recordings of skin conductance algesimeter (SCA, Med-Storm Innovation, Norway) from foot and NIRS (NIRO 200 Hamamatsu, Japan) from head were obtained starting 7 minutes before venipuncture until 7 minutes after. PAIN scores were obtained during and 7 minutes after procedure. Non-nutritive sucking was provided throughout the study.
Results: 25 patients were included. Median PAIN scores were similar in both groups during venipuncture 5 (1-8) in Group 1, and 6 (1-10) in Group 2. Scores were decreased significantly seven minutes after procedure in both groups; as 1 (0-1) and 3 (1-3) in Group 1 and 2 respectively. In Group 1, cerebral blood volume (CBV) was increased from baseline after the procedure (p=0.008) however in Group 2 there was a decrease in CBV from baseline without statistical significance. Cerebral blood flow (CBF) was increased from baseline in both groups without statistical significance. SCA values were slightly increased from 0,23 to 0,29 in Group 1 and from 0,23 to 0,59 in Group 2.
Conclusion: Nonnutritive sucking and 30% glucose attenuate pain and stress responses during venipuncture however cerebral effects are open to investigation.


A-486-0017-00169
Polymorphic Length of FOXE1 Alanine Stretch in Isolated Cleft Lip / Palate
Background
Objective
Patients and Design
Results
Conclusions