

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，主席為荷蘭的 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

頁碼

壹、 摘要.....	2
貳、 目次.....	3
參、 本文.....	4
一、參加目的：.....	4
二、會議過程：.....	5
三、會議心得：.....	11
四、回單位後報告情形：.....	12
五、建議事項：.....	13
六、參加此會議對單位之貢獻：.....	14
肆、 附錄.....	15
附件一：回單位後報告之內容.....	15
附件二：出國參加會議日程表及議程表.....	15

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，僅差在台灣的社会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”，也讓人佩服其能成為大師的風範。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為主，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 neurotrophin 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，因為在新生兒神經科大師指出腦部在缺氧後的傷害，會影響到認知與行為(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，以歐洲為使用大宗)的藥物動力學討論，發現 phenobarbital 不會受低溫影響藥物濃度、接著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，跟傳統認為這是外科必須介入否則會很快惡化的概念不同。因為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為口頭報告實屬不易，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。下午開始的主題是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褪黑激素時，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(因為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):最後一天因為要趕下午 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，其中一篇題目為「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(如附件一與二)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。

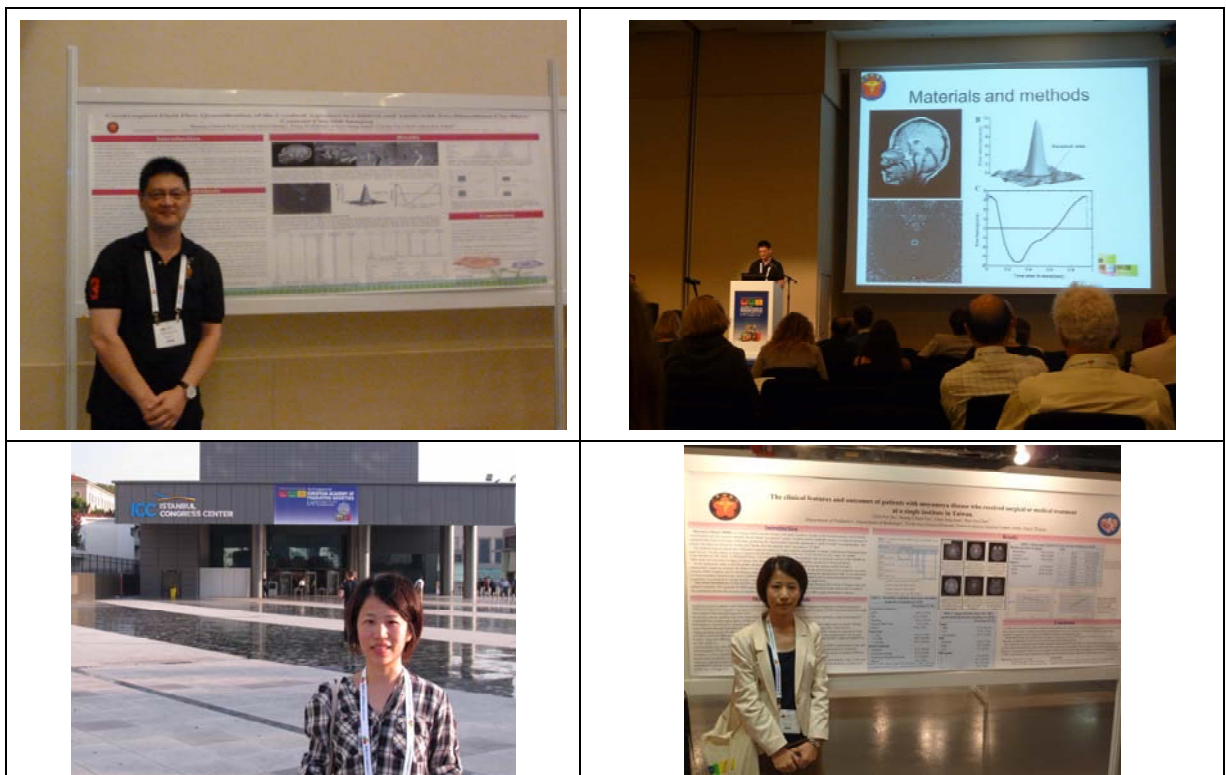
在參加這次大會之後，提供職等很多可以開發研究的項目，特別是在新生兒缺氧性腦病變的研究有許多動物模型可以建立，是可以開發研究的題材；另外在影像學的領域，很多高階影像可以提供很多精確且詳細的訊息，職等所報告的兩篇海報均與腦部影像的探討有很大關係，回想在今年度中旬小兒神經科年會有邀請到陳震宇教育長演講腦部 MRI 的應用，看起來似乎能相互呼應，而且這些影像檢查均為非侵襲性，是可以開發臨床結合影像的另一個有趣課題，也值得繼續開發相關研究。

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，實為值得鼓勵。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為全面性、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。



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)

Three Societies. One Congress. A Wealth of Knowledge

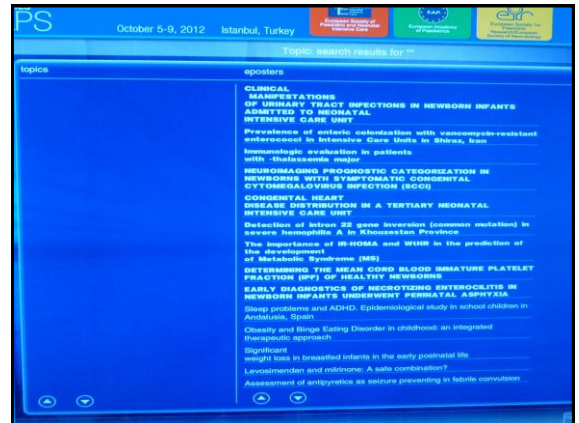
The 4th Congress of the
**EUROPEAN ACADEMY OF
PAEDIATRIC SOCIETIES**
October 5-9, 2012, Istanbul, Turkey

第四屆歐洲小兒科醫學會

報告人: 范洪春



CHINA	TAIWAN R.O.C.
<ul style="list-style-type: none"> BIN, Wang CHEN, Hong J. CHEUNG, Tiffany FENG, Yang GU, Peng JIANG, Hui JING, Wang LI, Jian LI, Shenghai LIAN, Ma LIU, Guilan LONG, Min SIEN, Shyhong SUN, Lioung WANG, Lai Shuan WU, Miyyuan XU, Tao YANG, Tan YI, OuYang YUNBIN, Chen ZENG, Qyi ZHOU, Wen Hao 	<ul style="list-style-type: none"> CHANG, Yi-Jung CHEN, Jeng-Chang CHANG, Ming-Chou FAN, Hong-Chern HSIAO, Hui-Pia HSU, Jen-Fu HU, Chih-Fen LAI, Shue-Hue LIAO, Sui-Ling



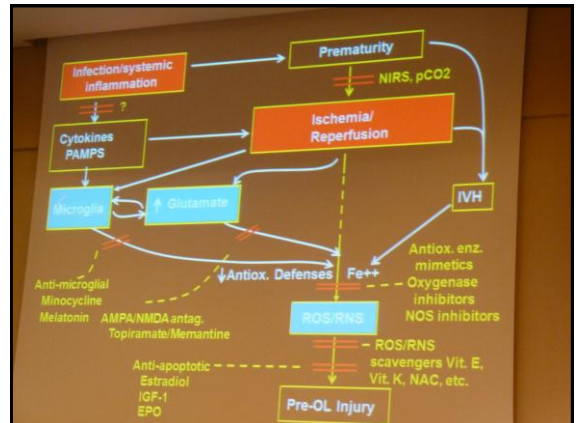
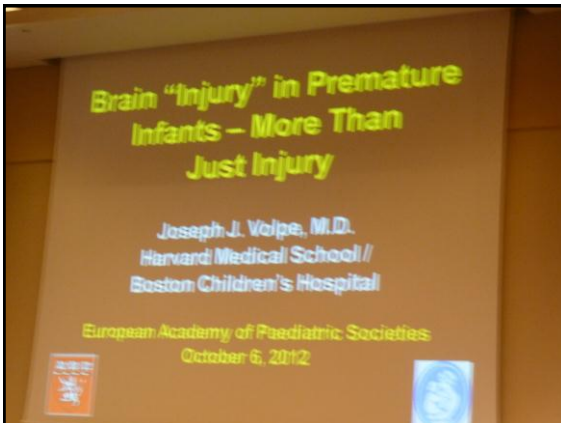
EAPS
October 5-9, 2012, Istanbul, Turkey

Basic and Clinical Science/Intensive Care Medicine	Collaborating 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, October 4, 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
08:00-09:00						Master Class: Science in Science		Workshop: How to write a grant proposal		Master Class: Overview of Neonatal Neuroimaging
09:00-10:00	SPN: Neonatal brain injury	EAP/ICOP: Quality Improvement of Pediatric Primary Care	ESPN/ESPN/C: Micro-osculation	ESPN/ESPN/C: Hematology	ESPN/ESPN/C: Organization of Pediatric Emergency Care in Europe	ESPN/ESPN/C: Hemato-oncology: Fund raising in pediatric oncology	ESPN/ESPN/C: Nursing: Neonatal & Pediatric		Metabolic endocrine children and adolescents program	Neurology
10:00-10:30	Coffee Break, Poster Viewing, Vaini Exhibitions									
10:30-10:45	Hall A State of the Art: Adolescent Health					Hall B (11:30-12:30) State of the Art: Epigenetics				
10:45-11:00	Lunch: Poster Viewing, Vaini Exhibitions									
11:00-11:30	Primary Care and General Pediatrics	(11:30-12:30) A Biography of Neonatal Pk type C (NICU)* Sponsored by Actelion	Neonates in NICU/PCU	(11:30-12:30) Intensive care in neonatal intensive care in perinatal: Sponsored by Actelion	ESPN/ESPN/C: Development in hospitalized children* Sponsored by Novartis	Neonatal Brain Injury: Concepts	Neonatal Brain Injury: Experiments	Neonatal Brain Injury: Clinical	Neonatal Brain Injury: Experimental	Neonatal Brain Injury: Clinical
11:30-11:45	EAP: Infectious Disease Management in Primary Pediatrics Care	EAP: Nutrition and Quality	Adult Diseases of Infant/Children	ESPN/ESPN/C: Respiratory Failure	ESPN/ESPN/C: Genetic: Update on neonatal resuscitation	ESPN/ESPN/C: Sleep	Developmental: Update on PCD and NICU practice	ESPN/ESPN/C: Neuroimaging	ESPN/ESPN/C: Neuroimaging	Congenital heart disease in ICU
11:45-12:00	Coffee Break, Poster Viewing, Vaini Exhibitions									
12:00-12:15	Lunch: Poster Viewing, Vaini Exhibitions									
12:15-12:30	(12:15-13:00) The Global Pediatric Education Consortium	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric
12:30-13:00	Coffee Break, Poster Viewing, Vaini Exhibitions									
13:00-13:15	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric
13:15-13:30	Coffee Break, Poster Viewing, Vaini Exhibitions									
13:30-14:00	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric	ESPN/ESPN/C: Neonatal & Pediatric



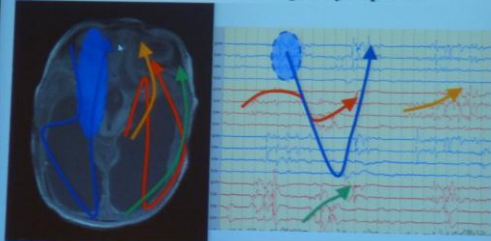
Microcirculation Dr R. Gonzalez, Spain

What does the neonatal EEG tell us

S. Vanhatalo

(a)synchrony

'(a)synchrony' is 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.

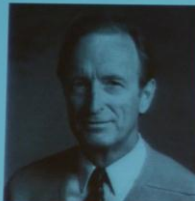
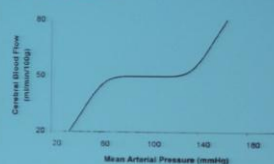
- ↓BP: immediate vasoconstriction followed by secondary dilatation.
- ↑BP: immediate vasodilatation followed by secondary constriction.

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

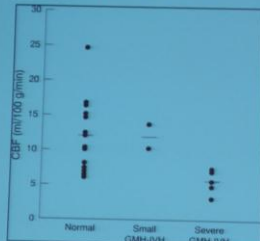




The ability to maintain cerebral blood flow in the face of a changing cerebral perfusion pressure.

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



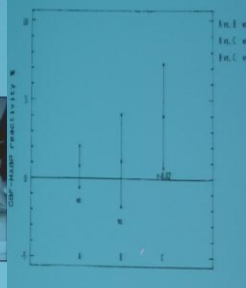



Meek JH et al. *Arch Dis Child* 1999;81:F15-F18

ADC ONLINE

CAMBRIDGE NEUROSCIENCE

Hans Lou

Impaired autoregulation of cerebral blood flow in the distressed newborn infant

Sunday, October 7, 2012

Time	Hall A	Hall B	Hall C	Hall D	Hall E	Hall F	Hall G	Hall H	Hall I	Hall J
08:30-09:00						Poster Session: Basic Principles	Poster Session: Cell Biology & Molecular Biology			
09:00-09:30	Hall A * 400 Poovey Minnie Nauman, Jim Spradley, Julie Kim, S. Sridhar, J. Wang, M. D. Coleman									Hall I * 4000 Chair: G. S. Barsh Chair: C. J. M. Hawton
09:30-10:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
10:30-11:00	Hall A * 4000 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall B * 4001 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall C * 4002 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall D * 4003 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall E * 4004 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall F * 4005 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall G * 4006 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall H * 4007 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall I * 4008 Chair: G. S. Barsh Chair: C. J. M. Hawton	Hall J * 4009 Chair: G. S. Barsh Chair: C. J. M. Hawton
11:00-11:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
11:30-12:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
12:00-12:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
12:30-01:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
01:00-01:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
01:30-02:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
02:00-02:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
02:30-03:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
03:00-03:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
03:30-04:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
04:00-04:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
04:30-05:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
05:00-05:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
05:30-06:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
06:00-06:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
06:30-07:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
07:00-07:30	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									
07:30-08:00	Hall A * Posters: Basic Principles, Cell Biology, Molecular Biology Hall I * Posters: Basic Principles, Cell Biology, Molecular Biology									

National Institutes of Health
Eunice Kennedy Shriver
 National Institute of Child Health & Human Development

Health Information Research Funding News & Media About NICHD

Last Update: 10/14/2012 [Printer Friendly](#)

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 Adjunct professor

Definition of Environmental Enrichment (EE)
"A combination of complex inanimate and social stimulation"
(Rosenzweig et al. 1978)
 Environmental enrichment: a continuum

Impoverished conditions


Standard laboratory conditions

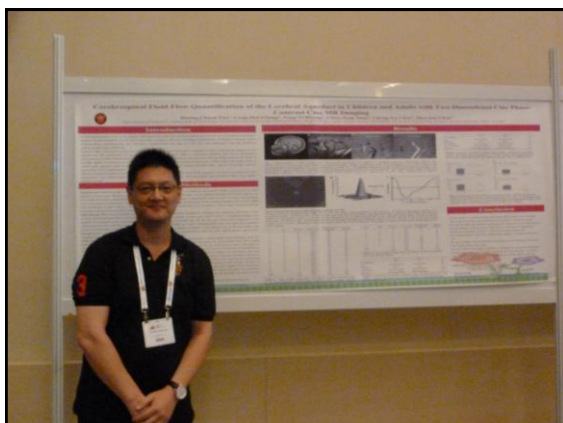

Condition of "enriched environment with possibility of voluntary physical exercise (EE)

 Courtesy: N. Berardi

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

Hueng-Chuen Fan¹, Lung-Hui Giang², Teng-Yi Huang³,
 Chun-Jung Juan², Cheng-Yu Chen², Shyi-Jou Chen¹

Department of Pediatrics¹ Department of Radiology² Tri-Service General Hospital, National Defense Medical Center, Neihs, Taipei, Taiwan.
 Department of Electrical Engineering³ National Taiwan University, Taipei, Taiwan.



Materials and methods



Monday, October 1, 2012

	Unit B	Unit C	Unit D	Unit E	Unit F	Unit G	Unit H	Unit I	Unit J
12.12.12					Medicine Hemato- Oncology Pediatric Neurology Diabetology		Medicine Hemato- Oncology Pediatric Neurology		
13.12.12	Unit B * Joint Inauguration of the New Theater * Big event: artistic activities, a concert of professional singing ensembles & choir * Inauguration of the Theater * Inauguration of the Theater * Inauguration of the Theater						Medicine Hemato- Oncology Pediatric Neurology	Medicine Hemato- Oncology Pediatric Neurology	
14.12.12									
15.12.12									
16.12.12									
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28.12.12									
29.12.12									
30.12.12									
31.12.12									

MSC-derived exosomes: A novel therapeutical approach in inflammation-induced preterm brain injury?

K. Drommelschmidt¹, S. Prager¹, I. Bendix¹, M. Keller^{1,2}, A.-K. Ludwig², S. Radke², B. Giebel², U. Felderhoff-Müser¹

¹ Department of Pediatrics I, Neonatology, University Hospital Essen, Germany
² Institute for Transfusion 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

Litwail et al. Nat Rev Immunol 2008 Sept 9; 8:729-38

Mesenchymal stem cells....

...but...

- get trapped into the lung
- do not engraft in affected tissues
- induce immunomodulation by soluble factors
- paracrine effect

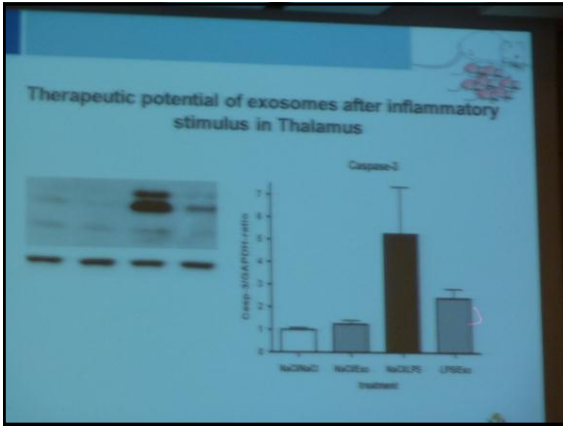
Animal model: inflammatory brain damage

Exosomes +/- LPS

cell death

Therapeutic potential of exosomes after inflammatory stimulus in Cortex cleaved Caspase-3 (n=13-15)

Treatment	Caspase 3 Ratio
NaCl/NaCl	1.0
NaCl/Exo	~0.8
NaCl/LPS	~4.5
LPS/Exo	~3.0

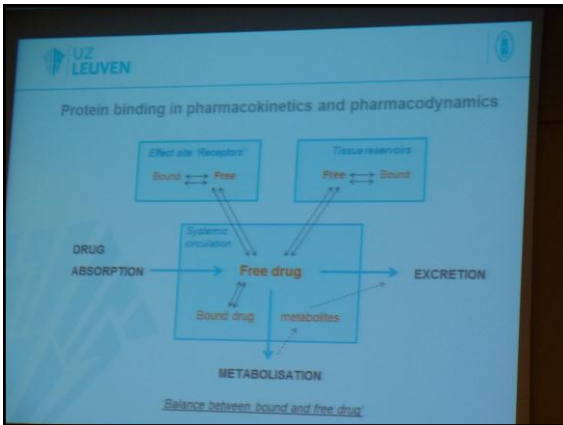


Cefazolin plasma protein binding and its covariates in neonates

A. Bello, A. Kulo, R. Verbeest, V. Cooley, J. de Rooij, P. Vermeersch, K. Allegaert

CPPE October 2012
6/10/2012

UNIVERSITY HOSPITALS 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

Shankar A.J., Thomas J., Aggarwal S., et al. (2009) J. Antimicrob. Chemother. 63: 1181-1187

↓

LIMITED DATA IN NEONATES

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

Indication/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	50 mg/kg/dose	3x/day (2d)
Diaphragmatic hernia repair	50 mg/kg/dose	3x/day (2d)

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) = $\frac{\text{Unbound CFZ concentration (}C_u\text{)}}{\text{Total CFZ concentration (}C_t\text{)}}$

Bound CFZ fraction (f_b) = $C_b/C_t = 1 - f_u$

Allegaert et al. J Clin Pharm Ther 2009; 34(1): 23-30

Shankar et al. J Clin Pharmacol 2009; 49: 27-34

Discussion: Endogenous substances influencing CFZ protein binding

CEFAZOLIN SERUM PROTEIN BINDING AND ITS INHIBITION BY BILIRUBIN, FATTY ACIDS AND OTHER DRUGS

M. S. Saeedi,¹ B. Zinat,² C. Casimiro,³ and J. P. Tassanar.⁴

¹Laboratório de Farmácia Clínica, UFRJ, ²Laboratório de Farmácia Clínica, Universidade de São Paulo, ³Departamento de Farmácia, Universidade de São Paulo, ⁴Departamento de Farmácia, Universidade de São Paulo

Bacharel (Pharmacol) 1999
37 (14) 2007-2014

1. Bilirubin
Neonatal hyperbilirubinaemia (↑ production, ↓ elimination)
Mutual interaction between bilirubin and cefazolin to bind albumin

2. Free fatty acids
Competition albumin binding sites
Other conformational state albumin

Increased unbound drug fraction

The clinical features and outcomes of patients with moyamoya disease who received surgical or medical treatment at a single institute in Taiwan

Chia-Fen Hsu, Sheng-Chen Fan, Chue-Ing Hsu, Shue-Ing Chen

Department of Pediatrics, Department of Radiology, Department of Neurology, National Taiwan University Hospital, Taipei, Taiwan

Introduction
Moyamoya disease (MMD) is a chronic cerebrovascular disease characterized by progressive stenosis or occlusion of the supra-aortic arteries. The pathogenesis of MMD is still unclear. The clinical features and outcomes of patients with MMD who received surgical or medical treatment at a single institute in Taiwan are reported.

Materials and Methods
A retrospective study was conducted to evaluate the clinical features and outcomes of patients with MMD who received surgical or medical treatment at a single institute in Taiwan from 1990 to 2010. The study included 100 patients who were diagnosed with MMD by angiography. The patients were divided into two groups: surgical treatment (n=50) and medical treatment (n=50). The clinical features and outcomes of the two groups were compared.

Results
The clinical features of the patients with MMD who received surgical or medical treatment at a single institute in Taiwan are reported. The outcomes of the two groups are compared.

IMMUNOLOGIC EVALUATION IN PATIENTS WITH β-THALASSEMIA MAJOR

A. Ahmadiashar, 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 comparison 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 ferritin 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 splenectomy 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-thalassemic patients and controls			Immunologic markers in splenectomized and not splenectomized patients		
Markers	Patients	Controls	Markers	Splenectomized	Not splenectomized
CD4	38.59±6.08	37.65±9.31	CD4	31.83±6.88	40.38±9.2
CD8	21.13±7.3	21.02±5.96	CD8	21.9±7.43	17.75±8.2
CD19	15.12±5.43	13.15±4.42	CD19	14.4±5.43	18.01±5.8
CD56	6.54±2.87	9.13±4.01	CD56	6.23±2.9	5.58±2.56

HLA DQ2/DQ8 typing in children diagnosed with celiac disease

Gabriela Lesanu, Cristina Becheanu, Mirela Stoiculescu, Iulia Tinca, Roxana Simabean, Daniela Parascu, Raluca Vlad

"Grigore Alexandrescu" Emergency Children's Hospital, Bucharest, Romania

Background and aims:
Genes encoding HLA DQ2/DQ8 are associated with celiac disease (CD). Testing for these genes has a high negative predictive value for the diagnosis. The aim of this study is to assess the role of HLA typing in asymptomatic individuals in whom the diagnosis of CD is uncertain.

Methods:
Retrospective study 2007-2012. Children investigated for CD who underwent HLA typing. Inclusion criteria: 1. Asymptomatic children of CD patients, 2. Children with CD, 3. Children with CD in whom the diagnosis of CD is uncertain.

Results:
164 children investigated for CD who underwent HLA typing. 77% HLA DQ2/DQ8 positive, 23% HLA DQ2/DQ8 negative. Sex distribution: 77% Male, 23% Female. Median age (months): 24.94 (CD+), 11.88 (CD-). Seroprevalence of celiac disease: 23% (CD+), 77% (CD-).

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

A. Rezaianzadeh, M.H. Imanieh, S.M. Dehghani, M. Haghghat, 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 50%, 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

Isotopic status in preschool children and evaluation of major dietary nutrient sources

Shahin A. Jafari, Tahmineh Farahi

Shahin A. Jafari, Tahmineh Farahi, Department of Nutrition, Shiraz University of Medical Sciences, Shiraz, Iran

Introduction
The aim of this study was to evaluate the isotopic status and major dietary nutrient sources in preschool children.

Methods
A cross-sectional study was conducted in Shiraz, Iran. The study included 100 preschool children aged 2-5 years. The isotopic status and major dietary nutrient sources were evaluated.

Results
The isotopic status and major dietary nutrient sources of the preschool children are reported.

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

Margriet van Dijk ¹, Sasie Bulk ², Carla van Oppen ³, Rob Heerdink ¹, Toine Egberts ¹, Dick Lindhout ¹

¹Clinical Pharmacy and ²Medical Genetics, ³Obstetrics and Perinatology, UMC Utrecht, The Netherlands

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 anti-epileptic 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 analyzed.

Results
86 pregnancies were included, six (7%) cases of anencephaly (all except one associated with other AEDs than VPA and CBZ) and 90 (94%) spina bifida cases (from 18 fetuses to 2000). In VPA-CBZ polytherapy (from carbamazepine 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), 80% (VPA) and 92% (CBZ + VPA).

Conclusion
NTDs after exposure to CBZ or VPA were mostly distally 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.

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

W. Fumagalli-Jaskowska, G. Polkowska, M. Rymczyńska-Kojaska, M. Zatorna-Karpiuk, B. Sanicka-Wysocka, K. Cyst

Department of Neonatology and Neonatal Pathology, Medical University of Lodz, Poland

Introduction
The aim of the study was to evaluate the effect of Lactobacillus rhamnosus GG (LGG) supplementation on the eradication of pathogenic intestinal flora in infants with acute gastroenteritis (AGE).

Methods
A double-blind, placebo-controlled trial was conducted. Infants with AGE were randomized to receive either LGG or placebo. The primary endpoint was the eradication of pathogenic intestinal flora.

Results
The study showed that LGG supplementation significantly reduced the duration of AGE and the eradication of pathogenic intestinal flora compared to the placebo group.

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

K.S. Najib, Z. Karamzadeh, 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: 10 children with idiopathic GH deficiency received Cyproheptadine 0.3mg/kg three times per week plus GH 0.6 IU/kg/day for six days a week for 1-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 baseline and 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 ± 0.5 kg, second trimester 1.13 ± 0.46 kg, third trimester 1.97 ± 0.63kg, 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 (ΔL: first trimester 2.40 ± 0.36cm, second trimester 1.85 ± 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 3.99cm, 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 UREPLASMA INFECTION

S.M. Lee, H.S. Eun, R. Hwang, M.S. Park, K.C. Park, C. Lee, Republic of Korea

Objective: 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 (< 32 weeks) and their mothers admitted to Severance Children's Hospital and Gangnam Severance Hospital NICU between Jan 2008 to Jan 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 37% 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 (28.3x3 wk, 1050x40g) and 365 infants with negative test (29.0x32 wk, 1180x50g) 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 chlamydiae was 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 rifampicin resistance, 30% of spectinomycin resistance and no tetracycline resistance were shown. Among 31 infants with erythromycin treatment, 16 (51%) of susceptible, 6 (19%) of intermediate were cured after 13 days of treatment, and 4 showed poor response erythromycin treatment, 2 changed to joamycin 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.

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

Antimicrobial Susceptibility	Susceptible	Intermediate	Resistant
Doxycycline	29 (94%)	0	0
Josamycin	31 (100%)	0	0
Ofloxacin	24 (76%)	0	0
Erythromycin	18 (58%)	6 (19%)	7 (22%)
Tetracycline	29 (90%)	0	0
Ciprofloxacin	16 (52%)	0	0
Azithromycin	22 (71%)	0	0
Clarithromycin	17 (54%)	0	0

VANCOMYCIN RESISTANT ENTEROCOCCI (VRE) COLONISATION IN A NICU

F.Guven, A. Say, D. Degimencio, N. Uygun Kulu, T. Sabuncu, M. Inalhan

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

Objective: Vancomycin resistant enterococci (VRE) are a cause of nosocomial infections in hospitals. VRE are pathogenic for vancomycin resistance to more virulent pathogens such as staphylococcus aureus both in vitro and in vivo. VRE colonization in children include young age, use of invasive devices, antimicrobial drug administration, immunodeficiency and underlying malignancy. Nowadays antibiotic resistant bacteria are found in community but more frequently in hospital environments. Diverse 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 colonization in our NICU the rectal swabs of 760 neonates were taken and sent to the laboratory at admission for analysis.

Findings: VRE was isolated in 12 (1.6%) of the neonates. 6 of the neonates (50%) were born in public hospital and 6 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. In spite of positive rectal colonization. The diagnosis of these babies: 7/12 neonatal jaundice, 2/12 neonatal dehydration, 1/12 urinary tract infection, 1/12 bronchopneumonia, 1/12 perinatal asphyxia. 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. These studies should be performed.

Diuretic use in Neonatal Chronic Lung Disease in England

J. Chahal, D. Jennings, M.A. Turner

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.

RESULTS
466 neonates (61%) 50 unique units
25% had a protocol for use
Age at commencement of diuretics

Medication	Median	Range
Furosemide	2	1-4
Spirinolactone	2	1-10
Chlorthalidone	7	1-7
Acetazolamide	30	10-30

DISCUSSION
Good response rate therefore likely to reflect national use.
Half respondents would use diuretics to aid weaning/ventilation and would therefore be a good target population for a clinical trial.
Median dosage of furosemide, spironolactone and chlorthalidone is 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.



High proportion of intestinal ESBL- colonization among infants at a neonatal intensive care unit in a tertiary hospital in Ecuador

V. Nordegra¹, A. Quiroz Penafiel², C.G. Gaskel³, A. Ivarren⁴, T. Galindo Barajas⁵, E. Ochoa⁶, L. Navarri⁷

Conclusions
Total, 60% of the identified infants were colonized by ESBL-producing Enterobacteriaceae. Two out of four strains isolated were considered as epidemic, 10 known to disseminate carbapenemases. The risk factors associated with colonization were duration of hospital stay and the consumption of breast milk and formula feeding. These results underscore the necessity for implementing surveillance programs and improved infection control prevent spread of ESBL.

Background and aims
Neonatal infections caused by Extended spectrum beta-lactamase (ESBL)-producing bacteria are associated with prolonged morbidity and mortality. No data are available on neonatal colonization with ESBL-producing bacteria in Ecuador.
The study aimed to assess the proportion of neonatal colonization with ESBL-producing Enterobacteriaceae and their resistance pattern among infants hospitalized in the neonatal intensive care unit, Cuenca, Ecuador.

Methods
A prospective cohort surveillance study. The setting was a third level neonatal intensive care unit (NICU) at the Hospital Vicente Corrales Velasco, Cuenca, Ecuador. From February to April 2011, stool specimens were collected every two weeks from all hospitalized neonates. Rectal swabs were plated on MacConkey agar containing ampicillin and cloxacillin (10⁸ U/ml). Species identification and susceptibility testing were done with Vitek2 (bioMérieux). Enterobacteriaceae typing was performed with automated repetitive PCR (Enterobase, bioMérieux).

Results
In total, 101 specimens were collected from 80 patients. ESBL-positive strains were found in 60% of the samples. The majority of the ESBL-producing strains were Enterobacter spp. (88.5%), followed by K. pneumoniae (11.5%). Enterobacteriaceae typing identified four clusters of ESBL-producing strains. Out of these, two K. pneumoniae strains (cluster 01, 02, 03, 04) belonged to clonal complex known to disseminate carbapenemases. Using a forward step-by-step regression model, NICU length of stay > 30 days and contact feeding with a combination of breastfeeding and formula feeding were found to be significantly associated with ESBL colonization (Table 2).

Epidemiology of inflammatory bowel disease in children from south Romania – a comparative study 2000/2012

Cristina Becheanu¹, Iulia Titus², Roxana Smendescu³, Gabriela Lezau⁴, Alexandrina Costantinescu⁵, Victoria Herbu⁶, Mihai Munteanu⁷

Background and aims
Inflammatory bowel disease (IBD) appears to be increasingly common in children even in Eastern Europe. The aim of this paper was to examine the prevalence of children with IBD and to compare the results with a similar study performed twelve years ago.

Methods
Inclusion criteria: patients with Crohn's colitis (UC) and Crohn's Disease (CD) Place: All the departments of pediatric gastroenterology in Bucharest, capital of Romania. Period: 2000-2012.

Results
Case distribution CD 19%, UC 81%
Patients diagnosed with IBD
2000: 21
2012: 77
age at diagnosis
number of cases
case distribution according to sex
CD: 58.97%, UC: 41.03%
distribution according to year of diagnosis

Conclusions
1. Number of patients with IBD has tripled in the last 12 years in our geographical area
2. UC is still the most frequent form of IBD in children > 12 years

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

A. Rezaianzadeh, M.H. Imani, S.M. Dehghani, M. Haghghat, 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.

INTERLEUKIN PHENOTYPE IN PATIENTS WITH PFAPA

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BACKGROUND
PFAPA is a chronic condition including recurrent fever episodes, aphthous stomatitis, adenitis, adenopathy. According to a serologic study, even between febrile attacks, there is increasing of pro-inflammatory mediators.

AIMS
1. To evaluate serum interleukin phenotype between febrile episodes in PFAPA patients from our clinic.
2. To evaluate correlation between C reactive protein (CRP) and pro-inflammatory interleukins (interleukin factor alpha (TNF- α), interleukin-1 (IL-1), IL-6).
3. To evaluate link between CRP and anti-inflammatory interleukins: interleukin-10 (IL-10).
4. To identify a sensitive biological marker to estimate PFAPA evolution.

Methods
Authors analyzed 2 groups: "PFAPA group" represented by 15 patients and "control group" consisting of 15 healthy patients were tested for serum levels of CRP, IL-1, TNF- α , IL-6, IL-10.
Data was statistically analyzed using independent sample t² test.

Inclusion criteria
- patients up to 10 years of age that fulfilled PFAPA diagnostic criteria.
- patients between febrile attacks.
- negative proinflammatory PCR based values in order to exclude bacterial infections for febrile patients.

Exclusion criteria
- patients during febrile attacks.

Results
Both group patients have normal serum levels for interleukines IL-6 and high values for TNF- α .
Mean value for TNF- α was 13.20 ng/ml for PFAPA group and 13.22 ng/ml in non-PFAPA group.
Regarding CRP values, mean value for PFAPA patients was 12.12 mg/l higher between 3.4-300 as compared to 0.64 in non-PFAPA patients.

Conclusions
1. TNF- α , IL-6, IL-10 aren't useful to appreciate PFAPA evolution pattern.
2. CRP remains a sensitive marker for disease activity in PFAPA patients, even out of febrile attacks.
3. Our study didn't confirm data of previous study.

Cytokine Responses in Neonates with Incontinentia Pigmentosa

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Background
Incontinentia pigmentosa (IP) is an acquired autoimmune condition. Inflammation can lead to significant alterations in cytokine production. However, little is known about the impact of cytokine molecules in patients with incontinentia pigmentosa (IP).

Objective
This study aims to investigate serum cytokine expression during the first 2 years of life in young children with IP. The study aims to assess whether serum cytokine levels are associated with clinical features and histologic changes in the most significant.

Methods
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Results
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EXHALED NITRIC OXIDE AND PULMONARY FUNCTION IN CHILDREN WITH ALLERGIC ASTHMA

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Background and aims: Nitric oxide (NO) is a marker of respiratory inflammation and is not yet measured in routine clinical practice. We aim to evaluate the relationship between exhaled NO and pulmonary function in children with allergic asthma.

Methods: Fifty children with allergic asthma, aged 11.3 years (SD 0.5), underwent spirometry and exhaled NO measurement. The relationship between exhaled NO and pulmonary function was assessed.

Results: Exhaled NO was significantly higher in the allergic asthma group compared to the control group. There was a positive correlation between exhaled NO and FEV1.

Conclusions: Exhaled NO is a marker of respiratory inflammation and is related to pulmonary function in children with allergic asthma.

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

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

Method: 10 children with idiopathic GH deficiency received Cyproheptadine 0.3mg/kg three times per week plus GH 0.6U/kg/day for six days a week for 1-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 baseline and 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 ± 0.40 kg; third trimester 1.07 ± 0.05kg); 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 ± 0.30cm; 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.

GITELMAN SYNDROME IN A SPANISH GYPSY PAEDIATRIC PATIENT MUTATION INTRON 9 +1G>

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Introduction: Gitelman syndrome (GS) is an inherited tubular disease characterized by metabolic alkalosis, hypokalemia and hypomagnesemia of renal origin and hypocalcemia. The majority of GS is linked to Gitelman syndrome (GS) mutation in the SLC12A6 gene encoding the sodium-chloride cotransporter 6 (NCC) in the distal part of ascending loop that is not specific to this ethnic group and is not a frequent mutation.

Report: A 10-year-old male child from Roma origin (Gypsy) was referred to our hospital because of metabolic alkalosis, hypokalemia, hypomagnesemia, renal origin and hypocalcemia. The majority of GS is linked to Gitelman syndrome (GS) mutation in the SLC12A6 gene encoding the sodium-chloride cotransporter 6 (NCC) in the distal part of ascending loop that is not specific to this ethnic group and is not a frequent mutation.

Conclusions: Gitelman syndrome is a rare tubular disease characterized by metabolic alkalosis, hypokalemia, hypomagnesemia, renal origin and hypocalcemia. The majority of GS is linked to Gitelman syndrome (GS) mutation in the SLC12A6 gene encoding the sodium-chloride cotransporter 6 (NCC) in the distal part of ascending loop that is not specific to this ethnic group and is not a frequent mutation.

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.

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. 2042 infants developed BPD: all were born at 5-29 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).

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.

VALPROIC ACID-MEDIATED PROTECTION AGAINST HYPEROXIC LUNG INJURY VIA HISTONE DEACETYLASE INHIBITION IN A NEONATAL RAT MODEL

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Table 1. Comparison of the study and control groups in terms of weight changes, histological grading, cellular protein expression and medial absolute count

	Control group	Hyperoxia group	Hyperoxia+VPA group
Birth weight (grams), mean SEM	3.0(±0.1)	3.0(±0.1)	3.0(±0.1)
Weight at the end of the study, mean SEM	13.0(±1.2)	12.4(±1.2)	13.4(±1.3)
Histological grading, median (range)	1(0-1)	4(0-5)**	2(0-3)*
Cellular protein expression per cell area, median (range)	11(4-16)	2(0-3)**	10(4-13)*
Medial absolute count, median (range)	12(4-15)	4(2-6)**	8(7-10)*

*p<0.05 compared to control group, **p<0.05 compared to hyperoxia group. Data are presented as mean (SEM).

Figures 1 and 2. Histopathological evaluation of three groups.

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