Evidence Table 13. Studies Evaluating Association of LBW and Other Outcomes
Part I

Author, Year UI#	Demographics	Inclusion Criteria	Exclusion Criteria	Disease/Condition Type (N)	Study Design (Duration)
Saarela 1999 99345620	Location: Finland Years of Birth: 1990-1994 Mean GA: Sample 1: 21.2±2.1 Sample 2: 29.3±2.4 Mean BW: Sample 1: 993±242 Sample 2: 1174±238 Male: Sample 1: 62% Sample 2: 54% Race: ND Enrolled: 174 Evaluated: 129 Number of sites: 1	BW<1500 GA<34	Death Multiple congenital anomalies Severe toxoplasmosis Lack of repeat renal n/s	Sample 1: Preterm infants with nephrocalcinosis 26) Sample 2: Preterm infants without Nephrocalcinosis (103)	Prospective cohort (6 years)
Saarela 1999 20069000	Location: Finland Years of Birth: 1990-1994 Mean GA: Sample 1: 26.7 ±2 Sample 2: 27.2 ±2 Mean BW: Sample 1: 905 ±209 Sample 2: 957 ±226 Male: Sample 1: 30% Sample 2: 50% Race: ND Enrolled : ND for total (enrolled cases: 29) Evaluated : 40 Number of sites: 1	Cases with nephrocalcinosis: VLBW treated in the NICU of Oulu University Hospital Born during 1990-1994 Control cases: Matched to the cases VLBW: nearest to the index cases in the hospital records Difference from case's BW less than 250 g Negative renal U/S during neonatal period for nephrocalcinosis Age difference during f/up renal examination less than 8 months from the index cases.	Urinary incontinence	Sample 1: Cases with Neonatal Nephrocalcinosis(20) Sample 2: Controls, matched control cases without neonatal nephrocalcinosis (20)	Prospective comparative longitudinal study [Follow up during early childhood (not specified but the mean age during f/up assessment was 4.6 yrs)

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Slonim 2000 20214515	Location: USA Years of Birth: 1992-1994 Mean GA: Sample 1: 1704.3 ±52.7 Sample 2: ND Mean BW: Sample 1: 30.9 ±0.2 Sample 2: ND Male: Sample 1: 57% Sample 2: 58% Race: ND Enrolled: 5927 Evaluated: 5750 Number of sites: 16	Patients with prematurity (<37 wks) and either an anatomic defect (congenital heart disease, GI tract anatomic lesion, neurologic complications (e.g., spina bifida, pulmonary lesions e.g., pulmonary agenesis)) or a prematurity related complication (BPD, Hydrocephalus, IVH, Short gut syndrome, trecheostomy, birth asphyxia, cerebral palsy) Admitted in any of the 16 participating in the study PICUs During period 12/1992-12/1994	Patients admitted in PICU in continuous cardiopulmonary resuscitation. Patients not reaching stable vital signs for > 2 hrs	Sample 1 Formerly premature patients admitted in PICU (FPP) (431) Sample 2 Their complement formerly nonpremature admitted in PICU (5.319)	Cross sectional study (FPP were assessed at a mean age of 35 mo and formerly nonprematures were assessed at a mean age of 72 mo in the 2 groups respectively)

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Part II

Author, Year	Predictors	Predictor Measure	Outcomes	Outcome Measures
Saarela 1999 99345620	General : 1) BW 2) GA Audiology: 1) Furosemide Cardiovascular or Pulmonary: 1) Chronic Lung disease Other: 1) Dexamethasone 2) Furosemide use	ND	Other: Nephrocalcinosis	Described natural resolution of nephrocalcinosis

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Saarela 1999 20069000	**General:** 1) Neonatal nephrocalcinosis in VLBW infants	Nephrocalcinosis defined by the presence of medullay echogenic densities in the renal tubular pyramids	**General:** Renal function during early childhood (4-5 yrs) 1) Renal tubular function 2) Distal tubular acidification capacity 3) Renal glomerular function ➢ Serum electrolytes ➢ Venous blood pH, pCO2, Base excess, bicarbonates ➢ Urine pH, ➢ Urine ??2-microglobulin ➢ Ca/Cr ➢ Ca/Na ➢ Acetazolamide acidification test ➢ Other variables: ➢ Ccr (ml/min/1.73 m2) ➢ FENa (%) ➢ FEK (%) ➢ Tubular reabsorption of Phosphate (TRP) (%) ➢ Maximum tubular reabsorption of phosphate per glomerular filtration rate (TmP/GFR: mmol/l) 4) Kidney growth 5) Systolic blood pressure	Tubular reabsorption of phospate and maximal tubular reabsorption of phosphate per glomerular filtration rate were calculated from the baseline urine and blood sample data. Creatinine clearance were calculated by the method described by Schwartz

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Author, Year	Predictors	Predictor Measure	Outcomes	Outcome Measures
Slonim 2000 20214515	**General:** 1) Prematurity with anatomic abnormalities and/or complications of prematurity (prematures vs nonprematures) 2) GA (<26 wks vs 26-32 wks vs >32 wks)	Anatomic abnormalities: Congenital heart disease Anatomical lesions of the GI tract Neurologic abnormalities: such as spina bifida Pulmonary lesions: such as pulmonary agenesis Complications of prematurity: BPD Birth asphyxia Cerebral palsy	**General:** 1) Characteristics of utilization of chronic care resources, PICU resources and characteristics of their PICU admissions: 2) Age of PICU admission 3) PICU readmissions during same hospitalization 4) Chronic care resources utilization 5) At least one chronic care resource used 6) Prior living conditions 7) Discharge location 8) PICU resource use 9) Length of stay in PICU (mean days) 10) PRISM-III score (mean)	Chronic care resources utilization: Ventilator Tracheostomy Gastrostomy Parental nutrition Prior living conditions: Home Institutions Never discharged Chronic hospital Discharge location Home Routine care Intermediate care Another PICU Chronic care PICU resource use: Ventilator Vasopressors Arterial catheter Central venous catheter PRISM-II scores: at first 24 hrs of PICU admission

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Part III

Author, Year	Associations found	Potential Biases	Comments
Saarela 1999 99345620	Occurrence of nephrocalcinosis (NC) by birth weight. BW group / n / % without NC / % with peripheral NC / % with extensive NC < 750g / 8 / 50% / 25% / 25% 751-999 / 36 / 65% / 20% / 15% 1000-1249 / 33 / 85% / 5% / 10% 1250-1499 / 52 / 90% / 7% / 3% Association of BW with NC sigificant at P< 0.001. NC was also significantly associated (p<0.001) with: Gestational age, Presence of RDS, Presence of BPD (O2 at 28 days), Presence of CLD (O2 at 36 weeks), Furosemide use, Dexamethasone use	(None)	Study was privately funded

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Saarela 1999 20069000	Predictors of renal outcome at age 4-5 yr 1) Neonatal nephrocalcinosis in VLBW children seems to lead to some signs of renal tubular dysfunction in early childhood. 2) However, distal tubular acidification, as measured by the actazolamide test 3) and glomerular function appears not to be specifically disturbed by nephrocalcinosis Renal function during early childhood (mean age: 4.6 yrs) Renal tubular function: ➢ Urinary calcium /Cr and ($p<0.004$) ➢ 2-microglobulin/Cr excretion were higher in the children with nephrocalcinosis ($p<0.05$) ➢ There was no difference in the fractional excretion of Na, K, or tubular reabsorption of phospate Distal Tubular Acidification capacity: • There was no difference in the distal tubular acidification capacity, as tested by the acetazolamide test : Abnormal response: Renal glomerular function: ➢ Creatinine clearance was no different between the 2 groups There was no difference between the 2 groups in the following : ➢ Serum electrolytes ➢ Venous blood pH, pCO2, Base excess, bicarbonates ➢ Urine pH, Kidney growth: ➢ Kidney growth was impaired by more than 2 SD ➢ There was no difference in the systolic blood pressure above 97.5 percentile ➢ None of the children had hematuria		

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Slonim 2000 20214515	Utilization of chronic care resources and PICU resources and characteristics of their PICU admissions of former prematures with a prematurity-related complication or an anatomical deformity [431] when compared to nonprematures [5319] was: • PICU survivors: 90% vs 94% (p=0.008) • Age of PICU admission (mean): 35 mo vs 72 mo (p=0.01) • Postoperative care (%): 44% vs 40% (p=0.15) • Prior PICU admissions: 11% vs 5.5% (p=0.01) Chronic care resources utilization: • Ventilator: 7% vs 1% (p=0.001) Tracheostomy: 16% vs 2% (p=0.001) • Gastrostomy: 23% vs 4% (p=0.001) • Parental nutrition: 3% vs 0.6% (p=0.001) At least one chronic care resource used: 30% vs 5.6% , p=0.001 Prior living conditions: • Home: 90% vs 97% (p=0.001) Institutions: 3% vs 1% (p=0.001) • Never discharged: 6.5% vs 2% (p=0.002) • Chronic hospital: 3% vs 1% (p=0.001) Discharge location • Home: 11% vs 6% (p=0.001) Routine care: 63% vs 77% (p=0.001) • Intermediate care: 15% vs 10% (p=0.03) • Another PICU: 1% vs 1.6% (p=0.52) • Chronic care: 1.6% vs 0.7% (p=0.02) PICU resource use: • Ventilator: 45% vs 35% (p=0.007) • Vasopressors: 15% vs 16% (p=0.12) • Arterial catheter: 28% vs 36% (p=0.006) • Central venous catheter: 17% vs 21% (p=0.03) Limits to care (%): 5.5% vs 4% (p=0.11) Length of stay in PICU (mean days): 5.98 ds vs 3.56 ds (p=0.01) PRISM-III score AT 24 HRS (mean): 4.90 vs 4.53 (p=0.80) Those born < 26 wks had a higher utilization of chronic care resources (ventilator, trachesostomy, gastrostomy) and chronic hospital care (p< 0.006) as compared to the other prematures.	There is a strong selection bias in this study as the inclusion criteria used for the selection of the FPPs were strongly correlated with the outcomes studied (the presence of an anatomic abnormality (150/431) or a complication of prematurity (281/483) in FPPs is strongly Correlated with the utilization of chronic care resources)	Funding: Not Reported