**Table S1.** Current practice for parenteral nutrition in NICU patients by type of hospital (University/teaching hospital vs. other hospital types)

| Nutrient | TOTAL<br>n (%) | University/teaching hospital<br>n (%) | Other hospital types<br>n (%) |
|---|---|---|---|
| Amino acids | | | |
| Initiation (p=0.069) | | | |
| D0 | 101 (63) | 71 (67) | 30 (55) |
| D1 | 51 (32) | 32 (30) | 19 (35) |
| D2 or later | 9 (6) | 3 (3) | 6 (11) |
| Initial dose (p=0.656) | | | |
| 0.5 g/kg/d | 44 (27) | 28 (26) | 16 (29) |
| 1.0 g/kg/d | 53 (33) | 34 (32) | 19 (35) |
| 1.5 g/kg/d | 34 (21) | 23 (22) | 11 (20) |
| 2 g/kg/d or higher | 27 (17) | 20 (19) | 7 (13) |
| Do not know | 3 (2) | 1 (1) | 2 (4) |
| Target dose (p=0.213) | | | |
| 1 or 2 g/kg/d | 11 (7) | 7 (7) | 4 (7) |
| 3 or 4 g/kg/d | 146 (91) | 98 (93) | 48 (87) |

| | | | |
|---|---|---|---|
| 5 g/kg/d or higher / Do not know | 4 (3) | 1 (1) | 3 (6) |
| Glucose | | | |
| Initial dose (p=0.022) | | | |
| 6 g/kg/d | 73 (45) | 42 (40) | 31 (56) |
| 7 g/kg/d | 41 (26) | 34 (32) | 7 (13) |
| 8 g/kg/d | 28 (17) | 19 (18) | 9 (16) |
| 9 g/kg/d or higher | 17 (11) | 11 (10) | 6 (11) |
| Do not know | 2 (1) | 0 (0) | 2 (4) |
| Target dose (p=0.160) | | | |
| 15 g/kg/d | 68 (42) | 40 (38) | 28 (51) |
| 16 g/kg/d | 38 (24) | 29 (27) | 9 (16) |
| 17 g/kg/d | 12 (8) | 8 (8) | 4 (7) |
| 18 g/kg/d or higher | 32 (20) | 24 (23) | 8 (15) |
| Do not know | 11 (7) | 5 (5) | 6 (11) |
| Lipids | | | |
| Initiation (p=0.015) | | | |
| D0 | 32 (20) | 24 (23) | 8 (15) |

| | | | |
|---|---|---|---|
| D1 | 77 (48) | 54 (51) | 23 (42) |
| D2 | 36 (22) | 23 (22) | 13 (24) |
| D3 or later | 16 (10) | 5 (5) | 11 (20) |
| Do not know | 0 (0) | 0 (0) | 0 (0) |
| Initial dose (p=0.126) | | | |
| 0.5 g/kg/d | 98 (61) | 60 (57) | 38 (69) |
| 1.0 g/kg/d | 59 (37) | 43 (41) | 16 (29) |
| 1.5 g/kg/d or higher | 3 (2) | 3 (3) | 0 (0) |
| Do not know | 1 (1) | 0 (0) | 1 (2) |
| Target dose (p= 0.372) | | | |
| 1 or 2 g/kg/d | 34 (21) | 19 (18) | 15 (27) |
| 3 or 4 g/kg/d | 123 (76) | 84 (79) | 39 (71) |
| 5 g/kg/d or higher / Do not know | 4 (3) | 3 (3) | 1 (2) |
| Caloric target (p=0.155) | | | |
| 90 or 100 kcal/kg/d | 29 (18) | 14 (13) | 15 (27) |
| 110 kcal/kg/d | 28 (17) | 20 (19) | 8 (15) |
| 120 kcal/kg/d | 65 (40) | 44 (42) | 21 (38) |

| | | | |
|---|---|---|---|
| 130 or more | 35 (22) | 24 (23) | 11 (20) |
| Do not know | 4 (3) | 4 (4) | 0 (0) |
| Maximal caloric intake prescribed (p=0.008) | | | |
| 110 kcal/kg/d | 13 (8) | 11 (10) | 2 (4) |
| 120 kcal/kg/d | 36 (22) | 22 (21) | 14 (26) |
| 130 kcal/kg/d | 32 (20) | 14 (13) | 18 (33) |
| 140 kcal/kg/d | 37 (23) | 28 (26) | 9 (16) |
| 150 kcal/kg/d or more | 34 (21) | 22 (21) | 12 (22) |
| Do not know | 9 (6) | 9 (9) | 0 (0) |

(Percentages do not necessarily sum up to 100% due to rounding)

**Table S2.** Current practice for parenteral nutrition in NICU patients by number of admissions per year of infants with a birth weight ≤1500g.

| | | Number of admissions | | |
|---|---|---|---|---|
| **Nutrient** | **TOTAL** | **0 - 65** | **66 - 111** | **≥ 112** |
| | n (%) | n (%) | n (%) | n (%) |
| Amino acids | | | | |
| Initiation (p=0.262) | | | | |
| D0 | 101 (63) | 24 (52) | 43 (69) | 34 (64) |
| D1 | 51 (32) | 17 (37) | 17 (27) | 17 (32) |
| D2 or later | 9 (6) | 5 (11) | 2 (3) | 2 (4) |
| Initial dose (p=0.611) | | | | |
| 0.5 g/kg/d | 44 (27) | 17 (37) | 15 (24) | 12 (23) |
| 1.0 g/kg/d | 53 (33) | 16 (35) | 19 (31) | 18 (34) |
| 1.5 g/kg/d | 34 (21) | 8 (17) | 14 (23) | 12 (23) |
| 2 g/kg/d or higher | 27 (17) | 5 (11) | 13 (21) | 9 (17) |
| Do not know | 3 (2) | 0 (0) | 1 (2) | 2 (4) |
| Target dose (p=0.343) | | | | |

| | | | | |
|---|---|---|---|---|
| 1 or 2 g/kg/d | 11 (7) | 6 (13) | 3 (5) | 2 (4) |
| 3 or 4 g/kg/d | 146 (91) | 39 (85) | 58 (94) | 49 (93) |
| 5 g/kg/d or higher / Do not know | 4 (3) | 1 (2) | 1 (2) | 2 (4) |
| Glucose | | | | |
| Initial dose (p=0.504) | | | | |
| 6 g/kg/d | 73 (45) | 26 (57) | 23 (37) | 24 (45) |
| 7 g/kg/d | 41 (26) | 8 (17) | 21 (34) | 12 (23) |
| 8 g/kg/d | 28 (17) | 6 (13) | 11 (18) | 11 (21) |
| 9 g/kg/d or higher | 17 (11) | 6 (13) | 6 (10) | 5 (9) |
| Do not know | 2 (1) | 0 (0) | 1 (2) | 1 (2) |
| Target dose (p=0.320) | | | | |
| 15 g/kg/d | 68 (42) | 24 (52) | 24 (39) | 20 (38) |
| 16 g/kg/d | 38 (24) | 9 (20) | 14 (23) | 15 (28) |
| 17 g/kg/d | 12 (8) | 6 (13) | 4 (7) | 2 (4) |
| 18 g/kg/d or higher | 32 (20) | 5 (11) | 14 (23) | 13 (25) |
| Do not know | 11 (6.8) | 2 (4.3) | 6 (9.7) | 3 (5.7) |
| Lipids | | | | |

| | | | | |
|---|---|---|---|---|
| Initiation (p=0.011) | | | | |
| D0 | 32 (20) | 10 (22) | 16 (26) | 6 (11) |
| D1 | 77 (48) | 16 (35) | 31 (50) | 30 (57) |
| D2 | 36 (22) | 11 (24) | 9 (15) | 16 (30) |
| D3 or later | 16 (10) | 9 (20) | 6 (10) | 1 (2) |
| Do not know | 0 (0) | 0 (0) | 0 (0) | 0 (0) |
| Initial dose (p=0.246) | | | | |
| 0.5 g/kg/d | 98 (61) | 31 (67) | 37 (60) | 30 (57) |
| 1.0 g/kg/d | 59 (37) | 15 (33) | 22 (36) | 22 (42) |
| 1.5 g/kg/d or higher | 3 (2) | 0 (0) | 3 (5) | 0 (0) |
| Do not know | 1 (1) | 0 (0) | 0 (0) | 1 (2) |
| Target dose (p= 0.224) | | | | |
| 1 or 2 g/kg/d | 34 (21) | 15 (33) | 10 (16) | 9 (17) |
| 3 or 4 g/kg/d | 123 (76) | 30 (65) | 51 (82) | 42 (79) |
| 5 g/kg/d or higher / Do not know | 4 (3) | 1 (2) | 1 (2) | 2 (4) |
| Caloric target (p=0.107) | | | | |
| 90 or 100 kcal/kg/d | 29 (18) | 12 (26) | 6 (10) | 11 (21) |

| | | | | |
|---|---|---|---|---|
| 110 kcal/kg/d | 28 (17) | 11 (24) | 7 (11) | 10 (19) |
| 120 kcal/kg/d | 65 (40) | 13 (28) | 32 (52) | 20 (38) |
| 130 or more | 35 (22) | 10 (22) | 14 (23) | 11 (21) |
| Do not know | 4 (3) | 0 (0) | 3 (5) | 1 (2) |
| Maximal caloric intake prescribed (p=0.199) | | | | |
| 110 kcal/kg/d | 13 (8) | 5 (11) | 3 (5) | 5 (10) |
| 120 kcal/kg/d | 36 (22) | 10 (22) | 10 (16) | 16 (30) |
| 130 kcal/kg/d | 32 (20) | 12 (26) | 11 (18) | 9 (17) |
| 140 kcal/kg/d | 37 (23) | 7 (15) | 19 (31) | 11 (21) |
| 150 kcal/kg/d or more | 34 (21) | 12 (26) | 13 (21) | 9 (17) |
| Do not know | 9 (6) | 0 (0) | 6 (10) | 3 (6) |

(Percentages do not necessarily sum up to 100% due to rounding)

**Table S3:** Questions of the survey questionnaire used for this report

**Q1. Function:**
[1] Consultant
[2] Higher Specialist Trainee
[3] Specialist Registrar
[4] Other: _____

**Q2. Years of practice:**
[1] less than 1 year
[2] 1 to less than 3 years
[3] 3 to less than 5 years
[4] 5 to less than 7 years
[5] 7 to less than 10 years
[6] 10 years and more

**Q3. Type of hospital:**
[1] University / teaching hospital
[2] General hospital
[3] Specialist hospital
[4] Private hospital

For the questions below, if you do not have the exact numbers readily available, please provide your best estimates.

**Q4. How many beds are there in your neonatal intensive care unit?**
…… # highest acuity beds
…… # intermediate care beds

**Q5. What is the average number of admissions to your neonatal intensive care unit per year, by birth weight?**
…… # <1000g
…… # 1001-1500g
…… # 1501g-2500g
…… #>250

*Parenteral nutrition in this survey refers to intravenous nutrition given via a central or peripheral line. Along with fluids and micronutrients, it contains macronutrients such as amino acids/protein, glucose and lipids. In all of the questions of this survey, please consider only the neonatal intensive care patients that you see as in-patients in the hospital.*

**Objective 1:** to understand the current treatment practices associated with neonatal Parenteral Nutrition; for example: nutritional objectives (target values); initiation of PN (first day of administration of AA, lipids, etc.)
Important definition: in this survey D0 stands for the first day of life.

**Q6. Amino acid provision – please chose the respective values, which best describe your current, standard practice:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| When do you start amino acids? | D0 | D1 | D2 | D3 | D4 | D5 or later | Do not know |
| What is your starting dose? (g/kg/day) | 0,5 | 1,0 | 1,5 | 2 | 2,5 | >2,5 | Do not know |
| What is your usual target dose? (g/kg/day) | 1 | 2 | 3 | 4 | 5 | >5 | Do not know |

**Q7. Glucose treatment – please chose the respective categories, which best describe your current, usual practices:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Which is your starting dose? (g/kg/day) | 6 | 7 | 8 | 9 | 10 | >10 | Do not know |
| What is your usual target dose? (g/kg/day) | 15 | 16 | 17 | 18 | 19 | >19 | Do not know |

**Q8. Lipid treatment – please chose the respective categories, which best describe your current, usual practices:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| When do you start lipid? | D0 | D1 | D2 | D3 | D4 or later | D5 or later | Do not know |
| Which is your starting dose? (g/kg/day) | 0,5 | 1 | 1,5 | 2 | 2,5 | >2,5 | Do not know |
| What is your usual target dose? (g/kg/day) | 1 | 2 | 3 | 4 | 5 | >5 | Do not know |

**Q9. Caloric targets – please chose the respective categories, which best describe your current, usual practices:**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| What is your usual caloric target? (kCal/kg/day) | 90 | 100 | 110 | 120 | 130 | >130 | Do not know |
| What is the maximum caloric intake normally prescribed? (kCal/kg/day) | 110 | 120 | 130 | 140 | 150 | >150 | Do not know |

**Objective 2:** To learn about the acceptance and utilisation of local and international guideline recommendations, specifically

- awareness about local and international guidelines
- level of acceptance of the recommendations
- implementation of the recommendations - role of the guidelines
- objections and obstacles hindering the use of guidelines

**Q10. Are you aware of guidelines for use of neonatal / pediatric parenteral nutrition?**
[1] Yes
[2] No

⌦ Ask only, if "1" in Q10 selected

**Q11. Which local and international guidelines for the use of parenteral nutrition in neonatal / pediatric patients are you aware of?** Please list the type of guideline and the name of the scientific society or authority who published or issued it.

……

⌦ Ask only, if "1" in Q10 selected

Q12. **To what extent do you agree or disagree with the following statements?** (Please indicate your answer on a scale of 1 to 7 where 1 means "do not agree at all" and 7 means "fully agree")

| | do not agree at all | | | | | | fully agree |
|---|---|---|---|---|---|---|---|
| I agree with most of the recommendations given in the guidelines for parenteral nutrition in pediatric patients. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I obtain a copy, read and follow guidelines for parenteral nutrition in pediatric patients as soon as they become available. | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| The scientific evidence that guidelines are based on, are not robust enough to be convincing and to follow them | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

⌦ Ask only, if "1" in Q10 selected

**Q13. What might prevent you from following guidelines for parenteral nutrition in pediatric patients? (**Please indicate your answer on a scale of 1 to 7, where 1 means "do not agree at all" and 7 means "fully agree")

| | do not agree at all<br>fully agree | | | | | | |
|---|---|---|---|---|---|---|---|
| Guidelines are too complex | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| Guidelines are too theoretical | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| I am following our internal protocols, which are not always aligned with the guideline recommendations | 1 | 2 | 3 | 4 | 5 | 6 | 7 |